'Big Things Are Happening' in the Refrigeration Industry

(1) An unknown gentleman "puts the finger" on Sam Mitchell, director of all Kelvinator advertising and sales promotion, at the convention banquet. (2) "Haven't seen anything like it in my 11 years in this business," Henry W. Hale of the Fall River Electric Co., who has been selling Kelvinators for that many years, tells Vice President Henry W. Burritt. Mr. Burritt isn't sticking out his tongue at Mr. Hale, but is just probably "wetting his whistle" for a reply. (3) George Dent of Bay City, Mich., youngest Kelvinator distributor, brought the convention to its feet cheering Thursday night when he displayed a voice of operatic possibilities in a duet with the professional singer with whom he is pictured. (4) C. E. Gambill, new Chicago distributor, likes the thermometer.

(1) "Here it is. How do you like it?" asks H. W. "Hike" Newell of Geyer, Cornell & Newell as he turns the pages of Electric Refrigeration News to point out the 4-page, 5-color Kelvinator advertisement to distributors during a lull in a session of last week's convention held at the Wilson theater in Detroit. V. J. McIntyre, domestic sales manager, is on the stage with Mr. Newell. (2) George Mason, Kelvinator's president and a great fishing and hunting enthusiast, couldn't wait until he got outdoors to put together the $50 fly rod which Bill Stoner (right of the two men standing), sales manager for the Witte Hardware Co., St. Louis distributor, presented him at the convention banquet, in payment of a bet based on 1935 sales accomplishment. Mr. Stoner gave the conventionites a big laugh by first appearing with a bamboo pole. At Mr. Mason's right (partially obscured by the microphone) isVice President Henry Burritt, who shamed Mr. Stoner into paying the bet. (3) "Every Kelvinator window display this year will be animated," says Domestic Advertising Manager Walter Jeffey, as he pulls the curtain on one of the displays.

(1) Stewart-Warner distributors, J. E. McDonald of San Antonio and Rush Wolf of Dallas, get a warm welcome to the convention from Charles D'Olive, assistant to the president. (2) These distributors are making sure that none of the valuable information they're getting will be forgotten. They are H. Kennedy, Don Stutz, and Harry Rubloff, all of Chicago. (3) Sales Manager John Ditzell (back to camera) helps Morty Selzman of New York City solve a local sales problem, as Ray Erlandson, Cincinnati, listens in. (4) S. V. Brooks of Bluefield and A. R. Tiller of Richmond get together on the technical information that Engineer Huppock of S-W has just given them.

(1) "What a year we ought to have with these new lines," William Slaughter of the Sheild Co., Ft. Worth, Tex., tells President Powel Crosley, Jr., of the Crosley Radio Corp. (2) Jack Rogers (left), vice president and general manager, and Al Braun, purchasing agent of Crosley Radio Corp., tackle a serious problem during a lull in the sessions. (3) "It looks OK to me," says Ed Cook of the H. T. Wilson Co. to Wade Montgomery of Carolinas Auto Supply Co. (4) Lee Bird of the factory staff; W. E. Titus, Oklahoma City; and District Manager Harry Roper swap experiences.

THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

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Around the World

With George F. Taubeneck

George Taubeneck, editor of the NEWS (right), and Bob Nixon, assistant business manager (left), with their cameras, on the way to California. They arrived in San Diego Saturday and were honor guests at a luncheon given by the San Diego Bureau of Electrical Appliances. The luncheon was attended by executives of every distributing organization in the city. Full details later. See schedule of issues below. The editor will sail from San Francisco on Jan. 25 for a 6-months tour to study export markets. He will represent the household refrigeration industry at the World Congress of Refrigeration to be held at The Hague, Holland, next June.

* * *

The Curtis Co., St. Louis

Our first call in St. Louis was made at the Wellston plant of the Curtis Refrigerating Machine Co., where we bumped plump into a news story.

Curtis engineers have designed a machine for service men which will do practically everything but collect the bill and kiss the maid.

H. C. MORRISON, refrigeration sales manager, and L. C. BLAKE, advertising manager, are downright proud of it. They took us over to a new two-story, 80x120 building Curtis has just completed, where this machine and other Curtis refrigeration products will shortly be made.

Is business good? Will it be better? They point to this new building as *prima facie* evidence of their need for expansion.

Also they showed us a warehouse full of compressors stacked that high, all waiting to be shipped to the export market—to Belgium, Czechoslovakia, Spain, France, Palestine, Ireland, China, Turkey, Algeria, South Africa.

* * *

New Master Service Unit

The Curtis Master Service Unit is a compact machine, 11 in. wide, 17 in. high, and 21 in. long. It weighs only 60 lbs., and can be used wherever electric current is available.

Unit consists of a piston-type high efficiency Curtis compressor, a repulsion-induction motor, filters, dehydrators, reducing valve, safety valve, air receiver, propane drum, hose, torch, and gun.

All equipment is mounted on a light portable base provided with rubber footing. It comes tested and ready for immediate use.

The propane drums are renewable and have a capacity of 25.3 cu. ft. of gas. One cu. ft. will produce 2,500 B.t.u., as compared to 1,450 B.t.u. for acetylene; total cost of soldering or welding is reduced.

It also eliminates the dangers attendant on the use of gasoline or alcohol, and combines into one compact unit everything needed for the following operations.

1. Soldering or brazing: The soldering torch attachment (included) produces an immediate hot staple flame having a temperature of 4,000° F.

2. Testing: Any part of a system may be tested for leaks after assembly by adjusting the pressure of the Curtis unit and checking with oil.

(*Continued on Page 4, Column 1*)

'Around - -'

and it comes out here!

FOLLOWING is the schedule of issues in which the "World Series" travel stories by Editor George F. Taubeneck will appear in the NEWS:

Now published—

Jan. 8—Detroit (Kelvinator distributors meeting).

Jan 15—Jackson, Mich., and Chicago (New 1936 refrigerators by Sparks-Withington, Stewart-Warner, and Fairbanks-Morse).

Jan. 22—St. Louis, Mo., (this issue) (Visits at Curtis Mfg. Co., Century and Wagner motor plants).

To be published—

Jan 29—Claremore and Tulsa, Okla.

Feb. 5—Dallas, Tex.

Feb. 12—El Paso Tex., and Phoenix, Ariz.

Feb. 19—San Diego Exposition Number. Feature issue full of pictures of the Exposition (which opens the night of Feb. 12) and the refrigeration exhibits, with impressions of the fair and Southern California refrigeration business.

Feb. 26—Los Angeles, Calif.

March 4—San Francisco, Calif.

March 11—Honolulu, Hawaii.

March 18—Suva, Fiji Islands.

March 25—Auckland, New Zealand.

April 1—Sydney, Australia.

G-E Conducting Series of 16 Conditioning Schools

BLOOMFIELD, N. J.—Air-conditioning department of the General Electric Co., will conduct its 1936 sales engineering training schools in 16 key cities throughout the country.

Cities selected, and opening dates for the one-week schools are as follows: Boston, New York, Minneapolis, Louisville, and Omaha, Jan. 20; Albany, Philadelphia, Chicago, Raliegh, and Dallas, Jan. 27; Rochester, Washington, Cleveland, Atlanta, and Los Angeles, Feb. 3; and Seattle, Feb. 10.

Topic scheduled for special discussion during the courses is that covering the type of air-conditioning equipment which will have a low operating cost, and be suitable to fit needs of the average business man.

4 Dulux-Finished Models Comprise Apex Line

CLEVELAND—The 1936 line of Apex electric refrigerators, manufactured by Apex-Rotarex Corp. here, is in four models ranging from 4.3 to 7.85 cu. ft. net capacity, and is characterized by a number of mechanical refinements and convenience features.

Cabinets have been restyled and have a streamline effect. The cabinet top is artistically curved, with the door and top of door opening arched to harmonize with the top surface. All corners are rounded. A black base sets off the whiteness of the cabinet proper, and the top is embellished with a one-piece strip of stainless steel.

Exterior finish on all cabinets is Dulux, and interiors are of porcelain, with rounded corners for easy clean-

(*Concluded on Page 9, Column 2*)

Buckeye Continues 'One Model' Policy

MANSFIELD—Continuing its "one model" policy inaugurated last year, Domestic Industries, Inc., manufacturer of Buckeye electric refrigerators, is again restricting its 1936 line to a single unit of 6-cu. ft. net capacity. Several changes and refinements have been made in this year's model.

Known as the Model 800, the new Buckeye unit is 57½ inches high, 27½ inches wide, and 22½ inches deep, and the food compartment has a shelf area of 10 sq. ft. There are three shelves and four ice cube trays, making 84 cubes or 6 lbs. of ice. Exterior finish is in Dulux, and interior in porcelain.

The cabinet is made by Steelcraft, and consists of a steel cover over a wood frame. Food shelves are of the flat ribbon type, tinned. Insulation is Thermocraft, 2 inches in the top, and 3 inches in sides, door, back, and bottom.

Compressor is of the reciprocating type, one cylinder, with an I.M.E. of 110 lbs. A ⅛-hp. General Electric capacitor-start, induction-run motor is used. The unit has an evaporator of the shell and tube type, and uses a Cutler-Hammer thermostatic expansion valve temperature control, manually operated, with wide cycle defrosting.

Condenser is made by Bush, and is of the finned tube type. Sulphur dioxide is the refrigerant.

Parts Manufacturers and Jobbers Meet Jan. 29

CHICAGO—Directors of both the Refrigeration Supplies and Parts Manufacturers Association and the National Refrigeration Supply Jobbers Association have been notified that they are to meet Jan. 29 in separate sessions at the Palmer House here.

The directorate of the parts manufacturers organization will meet at 9:30 a.m., while the directors of the jobbers organization will meet later in the day, according to present plans.

Although members of the two organizations are meeting separately, one of the main purposes of both sessions will be to make plans for closer cooperation between the two organizations.

Westinghouse 'Golden Jubilee' Refrigerator Has Unit Mounted In Base & Many New Features

* * *

Exterior and Interior of Cabinet Redesigned For 1936 Models

MANSFIELD—A new line of "Golden Jubilee" electric refrigerators, in 15 models of from 2 to 20-cu. ft. capacities, featuring added useability, extra convenience and operating economies, and its first "bottom mounted" units, is Westinghouse Electric & Mfg. Co.'s contribution to the industry for 1936.

Characterized as "the new standard of refrigerator value," the 1936 Westinghouse line includes:

1. A continuation of the streamline styling introduced and featured by the company last year.

2. A new adjust-o-shelf, which lifts to make room for watermelons or big roasts, and gives extra shelf space for many small things; and a foldaway shelf, which tilts back to make room for tall bottles.

3. A triple food-saver set of three Moonstone ware containers, mounted on a sliding shelf so as to be easily available, and especially convenient for left-overs.

4. A built-in crisping pan for fruits and vegetables.

5. A built-in utility basket of rust-resisting wire, drawer-type, for small packages, and containers.

6. An improved "Eject-o-Cube" ice tray, for instant and easy ice cube removal.

7. An oversize froster of welded Sanalloy, with a refrigerated shelf for

(*Concluded on Page 2, Column 1*)

Licensing of Detroit Service Men Planned

DETROIT—A proposed ordinance which would raise local standards of refrigeration service work by requiring that all persons and companies engaged in the installation or servicing of electric refrigerators be licensed by the city, will be considered by Common Council at its Jan. 28 meeting.

The movement, which has the backing of the Detroit chapter of Refrigeration Service Engineers Society, would require all applicants for licenses to prove at least three years' experience in refrigeration service work, either on their own part or on the part of persons employed by them. Licensees would also be required to post a bond of $1,000 with the city.

Proposal for the ordinance was first brought before the Council at its Jan. 7 meeting, and was referred to the corporation counsel and the Department of Building and Safety

(*Concluded on Page 14, Column 4*)

New Frigidaire Line Shown to Distributors At 'Dress Rehearsal'

By T. T. Quinn

DAYTON—In a program packed with punches from start to finish, Frigidaire gave approximately 800 distributors, district managers, district representatives, and service managers from all parts of the country a "dress rehearsal" of its 1936 refrigerators and the sales and advertising program back of them in a special pre-view showing here last Tuesday.

On Wednesday, the men visited Frigidaire's Dayton and Moraine plants, studied production methods, and watched the new models roll down the assembly lines. Thursday and Friday were devoted to group and individual conferences with company officials.

New products for 1936, unveiled at the meeting, will be shown to distributor and dealer sales organizations by three factory crews covering more than 40 cities. Official announcement of the line will be made early in March.

Frigidaire's 1936 refrigerators, covering a complete range of sizes in

(*Concluded on Page 10, Column 1*)

Westinghouse Stresses Engineering at Air Conditioning School

MANSFIELD, Jan. 21—In the belief that "smart engineering" is the most powerful sales factor in modern air conditioning, Westinghouse Electric & Mfg. Co. is conducting an air-conditioning application, engineering, installation, and service school for its distributors' representatives here this week. The school opened Monday morning and will close Saturday noon.

First two days of the school were

(*Concluded on Page 11, Column 1*)

1936 Leonard Prices Start at $104.50

By Phil B. Redeker

GRAND RAPIDS, Mich.—Leonard prices this year will be competitive, and are on about a par with last year's prices, with a lower differential between the porcelain and lacquer models, Leonard distributors learned at the convention here last week.

List prices on the 1936 models, *including* the $5 for the four year extra warranty, are as follows:

L3-36—$104.50; L4-36—$129.50; L5-36—$164.50; L6-36—$189.50; L7-36—$219.50; P5-36—$184.50; P6-36—$209.50; P7-36—$249.50.

Leonard has two "special" models this year, LS5-36 and LS6-36, which are priced at $144.50 and $164.50, respectively.

Distributors rose to their feet and cheered the return of R. I. Petrie as sales manager of the Leonard organization, as Mr. Petrie stepped out on the stage of the Civic auditorium here to present the new line.

Mr. Petrie described the various features of the new line to the dis-

(*Concluded on Page 11, Column 1*)

Wyllie Made General Manager of Temprite

DETROIT—John Wyllie, formerly sales manager, last week was appointed general manager of Temprite Products Corp., manufacturer of Temprite beverage-cooling equipment.

Mr. Wyllie left a position as chief of the sales engineering department of Kelvinator Corp. to join Temprite as sales manager in the spring of 1934.

He has been appointed with the electric refrigeration industry since 1924, at which time he went to work for the old Nizer Corp. He did field service work for Nizer and in 1926 he organized the Nizer Correspondence School which was open to anyone interested in learning more about electric refrigeration.

When Nizer was merged with Kelvinator Corp. Mr. Wyllie was appointed assistant manager of the Kelvinator factory commercial sales department. In 1929 he went to New York City to take over the direction of commercial sales for the New York branch. In 1930 he returned to Detroit to organize and manage the Kelvinator commercial engineering department.

Mr. Wyllie is a graduate of the University of Michigan and head of the Detroit chapter of the American Society of Refrigerating Engineers.

York Distributors Approve Enlarged Program Of Advertising and Sales Promotion

YORK, Pa.—York distributors and dealers convened 80 strong at the main plant here on Monday, Tuesday, and Wednesday of last week (Jan. 13, 14, and 15), made inspection trips of the company's two big manufacturing plants, heard York sales executives analyze the market for commercial refrigeration and air-conditioning equipment, and agreed upon a program of sales promotion and advertising which will involve a quadrupled advertising appropriation by the York Ice Machinery Corp. in 1936.

Theme of the 1936 advertising campaign will be "Call on York—Headquarters for Mechanical Cooling Since 1885." This theme will be emphasized in a trade paper advertising drive to start immediately, and in consumer advertising which begins with full pages in the Jan. 25 issue of the *Saturday Evening Post*, the Jan. 27 issue of *Time*, the Feb. 1 issue of *Business Week*, and in the February issue of *Fortune*.

"Main objective of our consumer advertising," states S. E. Lauer, general sales manager, "will be to make the public more conscious of York and its products, to make our name a synonym for mechanical cooling, and to maintain and strengthen our position in applied or engineered mechanical refrigeration and air conditioning."

Copy is being prepared by J. M. Mathes, Inc., New York advertising agency, working with Frank Chalm-

(*Concluded on Page 14, Column 3*)

18 Models with Many Features Make Up Westinghouse Line

(*Concluded from Page 1, Column 5*)

extra-fast freezing, and a frozen storage compartment made possible by removing the lower shelf.

8. A seven-point temperature selector, with an "economy" operating position to be used when the refrigerator is not in heavy use, and economy defrosting.

Built-in or "hidden" features of the new models include cabinets of welded all-steel, reinforced by steel, and rust-resisting; the time-tested hermetically sealed unit, force-draft cooled, and permanently oiled so it needs no service or attention; extra-thick insulation, and "bonderized" processing to protect against rust.

Cabinet Tops Flat

Tops of the new Westinghouse cabinets are flat, to give extra space for loading or rearranging the contents of the refrigerator, as well as for easy cleaning. Hardware is streamline, of heavy forged metal with a high-luster chromium finish, and is set off by black enamel. Nameplate and door handle are also streamlined.

Pedestal bases of the Golden Jubilee models are recessed, and have a black scuff-proof finish. The deluxe models have black and chromium-trimmed broom high bases.

Every model in the line is covered by the Westinghouse five-year protection plan, which affords insurance against service expense at a cost of $5, and which is included in the purchase price.

The ED series, or Golden Jubilee models, include five Dulux-finished units, ranging in size from 3 up to and including 7 cu. ft. food compartment capacities. Interiors of the three largest models in the line are of acid-resisting porcelain; while the two smaller units have interiors of high-bake Dulux.

Five Deluxe Models

The two larger models have the adjust-o-shelf, and the triple food-saver set; the three largest models have the eject-o-cube ice tray; and all but the smallest model have the crisping pan, utility basket, and interior electric light.

Added features and refinements are found in the five models which make up the Golden Jubilee deluxe series. This line includes models of 4.4, 5.4, 6.7, 7.8, and 9.5-cu. ft. capacities, all of which are available in both porcelain and Dulux exterior finish on "bonderized" rust-resisting steel.

The hermetically sealed unit is top-mounted in this line, and the seven-point temperature selector is outside the food compartment, at the top of the front panel. All models in this line have covered evaporator doors, and other features, such as the revolving shelf, triple-storage food compartment, the triple food-saver set, button-touch door latch, and improved eject-o-cube tray are included in the series.

Deluxe Interiors Porcelain

Porcelain-exterior models are designated as EPX models, and Dulux-finished units are EDX models. Interiors on all deluxe units are porcelain.

For those whose requirements fall outside the general classifications, Westinghouse is making two special large models, of 13.5 and 20.1 cu. ft. net capacities. These units have extra-large storage space, and 21-lb. ice-making capacities. Model DC-20, a unit of 2-cu. ft. capacity, is also included in the line.

In announcing the "Golden Jubilee" refrigerator line for 1936, Westinghouse's Vice President A. E. Allen spoke optimistically of the company's sales record in 1935, and of its outlook for 1936.

"For the entire Westinghouse company, 1935 was the best year in sales billed since 1930," he said. "We show approximately a 35 per cent increase over 1934. The merchandising division has enjoyed approximately the same increase. While the electrical industry (Nema) as a whole shows a 24 per cent increase in unit sales of refrigerators, Westinghouse shows a 46 per cent increase. In 1935 also, Westinghouse enjoyed a 49 per cent increase in electric range sales over the 1934 total."

"1936 to Be Biggest Year"

Reviewing the progress of household electric refrigerators, R. C. Cosgrove, manager of household refrigeration sales, said:

"1936, from all indications, is going to be by far the biggest and most successful year for electric household refrigerators. Every company seems to have bigger and broader plans than ever before.

"The industry expects that, in 1936, at least 1,850,000 electric household refrigerators will be purchased."

Mr. Cosgrove next detailed the convenience features of modern refrigerators, including hermetically sealed units, evaporators, control mechanism, five-year protection plans, finishes, and present low-cost finance terms, which, he said, "make this piece of kitchen equipment available to practically every family, regardless of how small the income."

New Water-Heater Line

Westinghouse is also adding to its household appliance line this year a new 40-gallon square shaped electric water heater, designed to set flush with walls and cabinets of modern all-electric kitchens. Features include concealed wiring, a toe-space cabinet finished in Dulux, and hermetically-sealed Corox heating units with separate thermostats for each unit, providing a temperature adjustment of 130 to 190° F.

All wiring and plumbing connections are made at the bottom, and concealed by the base panel. Special recessed front base panel is available, providing for toe-space so it can be lined up with base cabinets in an all-electric kitchen. Absence of exposed connections, plus plain white Dulux finish and black base, combine to give the water heater a pleasing and dignified appearance.

The fluted vertical panel on the front of the heater serves as a cover plate for the heating element openings. A 1¾-in. knockout in the top cover allows for a temperature relief valve installation where required. Two Corox heating elements employ elements hermetically sealed in a seamless copper tube.

Heat is held inside the water tank by a thick wall of shredded redwood bark, averaging 3¾ in. in thickness. This insulation, said to be the most efficient known for water heaters, is claimed to have a very low conductivity value and high resistance to rot, rodents, and vermin.

Nine New Ranges Offered

The "economizer" speed unit providing a simmer heat for surface cooking and which is claimed to cut monthly electric cooking costs at least 18 per cent, is the big feature of the line of nine new electric ranges which Westinghouse introduces this year.

Other refinements of the new Westinghouse range line include two ovens operating independently of each other, making it possible to prepare a greater amount of food at one time, or effecting a saving through the use of the smaller oven when a large oven is not necessary; Minute Minder, a convenient signaling device that marks a predetermined time for surface cooking operations; oven lights that glow brightly when the oven doors are opened, showing the condition of cooking food without the necessity of removing it from the oven; swinging platform lights that light the clock and swing over cooking food when desired; swinging light shades equipped with appliance receptacles, one always "live" and the other automatically controlled by the clock.

Warming Compartment Provided

The ranges also provide a warming compartment in which temperatures can be controlled by oven thermostats as low as 150°; a cigarette lighter mounted on the top of the backsplasher for "matchless" or complete electric kitchens; a portable Econo-Cooker, an accessory making it possible to prepare complete dinners for as little as one cent per meal without using the oven—the Econo-Cooker is portable and has an adjust-o-matic control which in turn may be connected with the clock for automatic time control; oven control; condiment set; non-tip, lock-stop shelves; storage drawers; and acid-resisting cooking surfaces.

The "Economizer" unit is said to introduce a new development in electric cookery, that of the simmer temperature. This unit has three temperatures; high, low, and simmer, in place of the conventional high, medium, and low.

Special Heat Ratios

Instead of using the conventional ratio of full heat for high, one-half for medium, and one-fourth for low; the new "Economizer" unit uses the ratio of full heat for high, one-fourth for low (wattage heat), and one-tenth for simmer. A 2,000-watt Economizer unit has wattages of 2,000 for high, 500 for low, and 200 for simmer.

The dual-ovens consist of an oven with a top unit of 2,000 watts and a bottom unit of 1,500 watts, the larger oven being equipped with dual-automatic indicating control with temperature range of 200° to 500° offering two-temperature cooking; the auxiliary oven is equipped with maintained temperature control with a temperature range from 150 to 500°; each oven has a bimetal helix thermostat and separate relay.

The larger oven has sufficient capacity to permit the roasting of a 25-lb. fowl and the smaller oven can be used either as an auxiliary for baking, broiling, etc., at the same time the larger oven is in use, or it can be used for cooking small portions of food, eliminating the necessity of heating up the large oven.

The Complete Range Line

Westinghouse complete range line consists of: the Emperor, with two ovens, white porcelain enamel finish, two 6-in. 1,200-watt "Economizer" units, Econo-Cooker, minute-minder, warming compartment, cigarette lighter, condiment set; the Regent is the same as the Emperor, except that it does not have the two bottom storage drawers.

The Viceroy has one large oven and a warming compartment, located at the side of the oven to balance the appearance of the range. This model has two "Economizer" platform units and two conventional platform units.

The Dictator has one large oven with a drawer at the opposite side of the range for storage use. This range has one 8-in. "Economizer" unit, automatic control, and is finished in white porcelain enamel.

The Challenger has practically all of the features of the Dictator with the exception that this range is not equipped with "Economizer" units and is a three-unit range.

Smaller Models

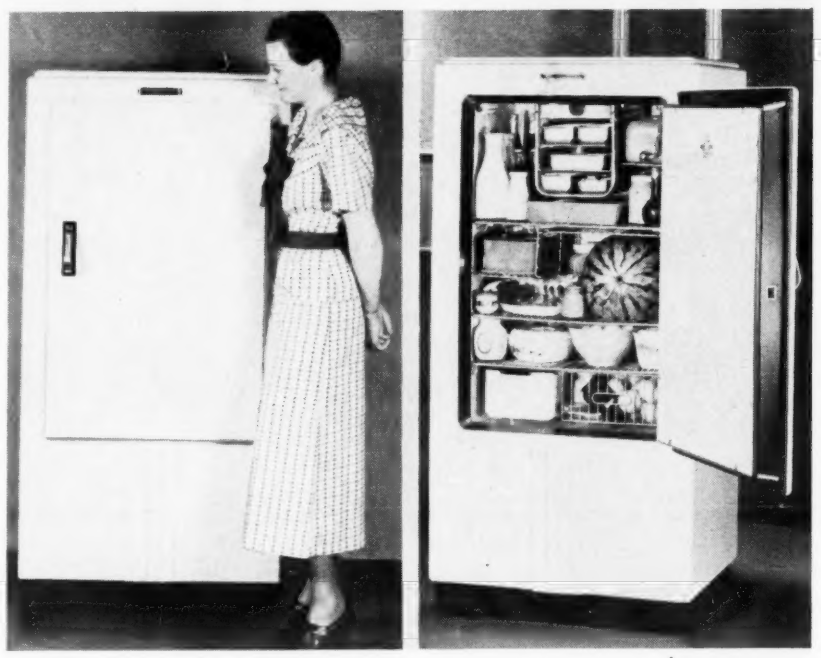
The Ambassador is a console or high side oven range with two "Economizer" units and full dual-automatic oven temperature control. It also has a block and condiment set mounted on the backsplasher.

The Crusader is a console model range, similar to the Ambassador, but it is not equipped with Economizer units or dual-automatic oven control. It does, however, have an automatic temperature and time controlled oven-control.

The Cardinal is a three-unit, welded frame range, mounted on a base cabinet.

The Coronet is a three-unit range, especially adaptable for use in apartments or small kitchens. It has a large oven, automatic oven temperature control, and scientific "heat-evener."

The Product and Its Specifications



Model No.	Storage Space (Cu. Ft.)	Shelf Area (Sq. Ft.)	No. of Cubes	Lbs. of Ice	Exterior Dimensions Height	Width	Depth
ED-70	7.0	14.6	118	12	60	29½	26½
ED-60	6.0	10.8	118	12	57½	28½	26½
ED-50	5.0	9.6	74	7½	54¾	27	25½
ED-40	4.0	7.4	44	4½	51¾	24	24¾
ED-30	3.2	5.6	44	4½	46¼	24	24¾
EDX (EPX)-95	9.5	15.9	118	12	66½	33	28
EDX (EPX)-78	7.8	12.3	118	12	61½	31½	27
EDX (EPX)-67	6.7	11.1	118	12	61	28	27
EDX (EPX)-54	5.4	10.2	74	7½	58	26½	26¼
EDX (EPX)-44	4.4	9.0	74	7½	56½	23¾	26¼
EPX-135	13.5	24.8	192	21	61¼	48¾	30½
EPX-200	20.1	37.7	192	21	77¼	48¾	30½
DC-20	2.1	2.7	22	2¼	36	22	22¾

All ED models are available in Dulux exteriors only, with interiors of porcelain, with the exception of models 40 and 30, which have interiors of high-bake Dulux. EDX models are finished in Dulux; EPX models in porcelain. Interiors of both are porcelain. EPX 135 and 200 are available in porcelain exterior only; DC-20 in Dulux only. All ED models except ED-30 have built-in crisping pan, utility basket, and interior light; models 50, 60, and 70 have eject-o-cube tray; models 60 and 70, adjust-o-shelf and triple-service tray. EDX and EPX models have interior light, built-in crisping pan and utility basket in all sizes; models 95, 79, and 67 also have revolving shelf, triple food-saver set, water cooler, eject-o-cube tray, and supersized chilling tray.

Shartle and Bowman To Head Sales For Grunow

CHICAGO—Appointment of Howard J. Shartle as general sales manager, and Otto H. Bowman as assistant sales manager, was reported last week by Wm. C. Grunow, president of the General Household Utilities Co.

Mr. Shartle was a business counsellor in Cleveland and former president and general manager of the Cleveland Talking Machine Co., where he was in charge of all domestic and export phonograph sales.

Mr. Bowman has been with the company since 1919 and was at one time head of the Janney-Bowman Co. of Detroit.

According to Mr. Shartle, announcement will be made soon of the Grunow organization's new executive department heads and divisional managers.

41,270 Units Shipped in Quarter by Kelvinator

DETROIT—Shipments of Kelvinator Corp. products during the quarter ended Dec. 31, 1935, totaled 41,270 units, an increase of 28 per cent over the 32,242 units shipped in the corresponding quarter of 1934, H. W. Burritt, vice president in charge of sales, declared last week.

The final quarter shipments were higher by more than 2,000 units than the shipments in the third quarter of the year, ending Sept. 30, 1935. This fact is significant, Mr. Burritt said, as the final quarter in other years has been the low period for shipments.

Lindsay Sails for Survey In Africa & S. America

CINCINNATI—Continuing his investigation of world-wide markets for electric refrigerators and radios, A. G. Lindsay, manager of the export department of Crosley Radio Corp., left recently on a trip to Africa and South America.

He will visit Crosley sales outlets in Cape Province, the Orange Free State, Natal, and Transvaal in Africa, and the principal centers of the South American continent.

"AN OLD NAME IN A YOUNG INDUSTRY"

CURTIS

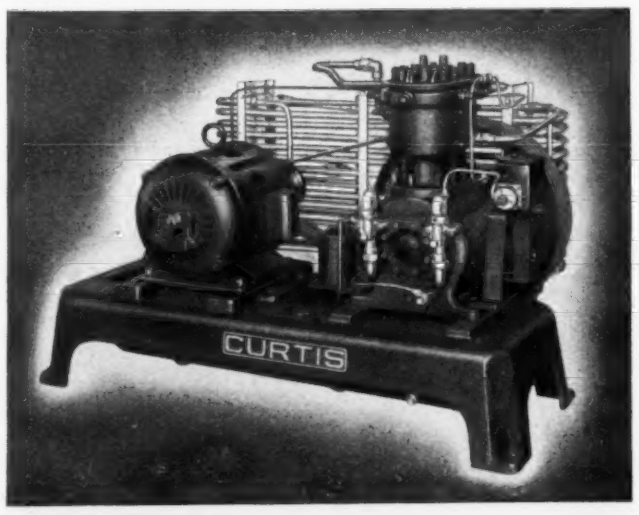
Specify CURTIS and be sure

ELECTRIC REFRIGERATION AND AIR-CONDITIONING UNITS

The sure way to satisfaction from a refrigeration or air-conditioning installation is to be certain that its most vital part—the condensing unit—is built by Curtis. Their constant, trouble-free performance is the result of 41 years' specialized experience in building fine compressors.

Complete Line—59 Units • Extra Capacity • Slow Operating Speed • Experienced Design • Low Upkeep • Rugged Construction • Fine Materials and Workmanship

Curtis enjoys the highest capital and credit rating—a Curtis product won't become an "orphan".



CURTIS Curtis Refrigerating Machine Company
Division of Curtis Manufacturing Co.
1912 Kienlen Avenue — St. Louis, Mo.

In Canada:
Canadian Curtis Refrigeration Co., Ltd.
20 George St., Hamilton, Ont., Can

McCORD Refrigeration PRODUCTS

COMMERCIAL EVAPORATORS
DOMESTIC EVAPORATORS
CONDENSERS
METLFLEX ICE TRAYS
SPIRAL FINNED TUBING
AIR CONDITIONING SURFACE

McCORD RADIATOR & MFG. CO.- DETROIT

ANNOUNCING! The new line of FAIRBANKS-MORSE *Conservador Refrigerators*

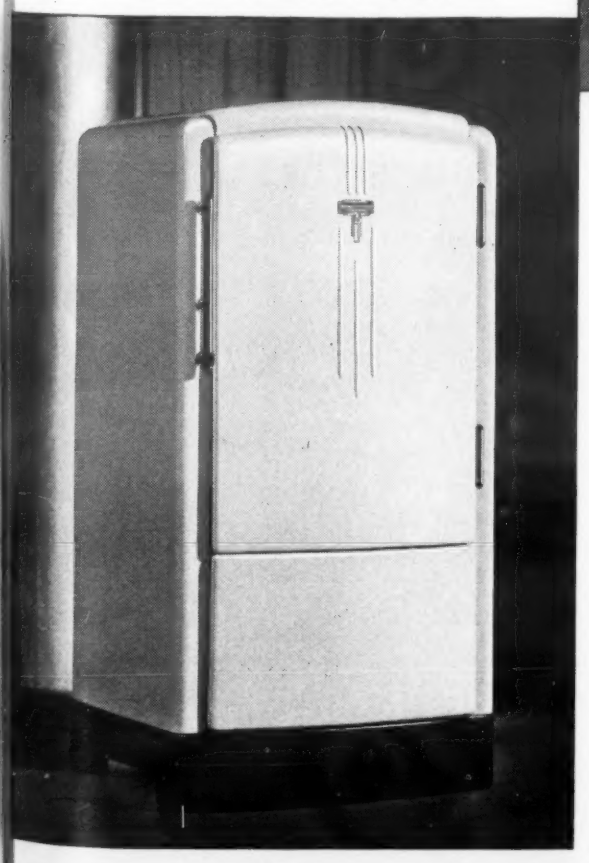
and a sales formula that works

CONSERVADOR DEMONSTRATION + PROSPECT = SALE!

THIS IS THE *Conservador*

It is a shelf-lined inner door behind the main door, for storing most frequently used foods. It opens at a touch of a button. It keeps warm air out and cold air in the main food compartment. It eliminates the penalty of the open door and is a patented, *exclusive* feature of Fairbanks-Morse Refrigerators.

America's Most Beautiful Refrigerator



● "Demonstrating the new Fairbanks-Morse Conservador and the other 14 star points to a prospect means a *sale* —nine times out of ten!"

That's not what *we* say. It's what several hundred *Fairbanks-Morse dealers said* at a sales meeting in Chicago a few days ago.

The "Conservador" gives you an exclusive, plus-feature that your prospect can see and feel and that you can easily SELL on the basis of its true ECONOMY and CONVENIENCE merits—points on which consumers will *insist*. It gives *you* the sales advantage you have been looking for.

Fairbanks-Morse Conservador gives you just exactly *that*—and more. It enables you to make the most dramatic and convincing demonstration of time-saving, step-saving and labor-saving convenience —plus *meter beating economy*—of any refrigerator at any price on today's market. Your prospect sees instantly why the *Conservador* saves time, food, electricity and money. The smart, uncluttered lines of the Fairbanks-Morse Refrigerator make their own sales talk, while the Fairbanks-Morse 106-year-old name is all the assurance of sound engineering and fair dealing that anybody might ask.

Cash in on the field's "BEST BET"

Maybe the Fairbanks-Morse franchise is open in your territory. If so—it is a profit opportunity too good to pass up. Write or wire now for complete details. Fairbanks, Morse & Co., *Home Appliance Division*, 430 South Green Street, Chicago.

15 Major Sales Features *plus* the *CONSERVADOR*

1. Beauty and Massiveness
2. Dulux Finish (Black Kick Plate)
3. Finger-tip Hardware
4. Conservador
5. More usable storage space
6. Economy
7. F-M Precision Manufacturing Experience
8. Safe, efficient conventional machine unit
9. Slow speed—longer life—accessible for service
10. Finned Cooling Unit
11. Fast freezing—generous ice supply
12. Demountable Baskets—easy cleaning
13. Quiet Operation
14. Insulation
15. Price

FAIRBANKS, MORSE & CO.

are the nation's largest makers of Diesel engines; leading makers of electric motors; leading makers of pumps; world's largest makers of scales.

FAIRBANKS-MORSE *Refrigerator*

OTHER FAIRBANKS-MORSE PRODUCTS . . . WASHING MACHINES, IRONERS AND RADIOS

Around the World

With George F. Taubeneck

(*Continued from Page 1, Column 1*)

This saves the use of expensive refrigerant.

3. Leak detecting: The unit has been designed for use as a leak detector by using the suction hose around joints to be tested. The ordinary blue flame of the unit will turn green if methyl chloride or Freon is present. A 20-ft. length of hose makes it possible to test joints in inconvenient locations.

4. Evacuating systems: New systems may be evacuated of air by connecting the suction hose to the unit. It will quickly draw vacuum on the entire system.

5. Cleaning: A blow gun is furnished so that a constant supply of high pressure air is available for cleaning condensers, etc.

6. Removing gas from old systems: The unit may be used to pump all of the refrigerant out of a system into a container or out-of-doors when the regular compressor cannot be used.

7. Oiling large compressors: By attaching suction hose and evacuating crankcase, new oil can be drawn into the crankcase through the suction gauge connection or regular opening provided for this purpose.

8. Setting pressure controls: The unit may be used to supply correct pressure for setting pressure controls. This eliminates the necessity of waiting for cooler or equipment to warm to a point where pressure may be set.

* * *

Twelve Cablegrams

Almost the first thing OLIVER S. IMES, advertising manager of Century Electric Co., and fellow alumnus of the University of Illinois, did after welcoming us to the big Century motor plant was call out E. S. MOORE, Century's export manager.

Tugging Mr. Moore out of his office just then was not so easy, for he had just received 12 cables from foreign agents that morning (Saturday), and was hard at work trying to fill the orders. One order was for shipment of $44,000 worth of goods!

"I don't know why," smiled this smallish, graying, debonair gentleman, "but most of our cables seem to come in on Saturday. That's generally an export department's busiest day."

He then proceeded to give us a letter to C. A. WHITE, ASEA Electric Ltd., London, England. Mr. White is resident engineer and European representative of the Century Electric Co.

According to Mr. Moore, Mr. White has visited every manufacturer and every importer of electric refrigeration equipment in Europe, and can give us an excellent over-all picture on the whole situation over there.

Too bad, he thought, that we weren't going to London first, instead of last.

Century has 75 offices abroad, and does a big export business. Mr. Moore himself has been around the world many times following the same route we plan to take.

* * *

Air-Conditioning Lag

Just back from Brazil and the Argentine, Mr. Moore believes that the latter country is going to be a great market for air-conditioning equipment in a few years.

Argentine people are progressive, have a passion for new things, like luxuries, and have the money to buy them with, and enjoy anything which increases comfort and enhances their *joie de vivre*.

He doesn't expect this market to develop for a couple of years, however; although he does believe that Argentina will be the first *big* foreign market for air conditioning.

There is always a lag in the development of any export market for a new American engineering contrivance, and Mr. Moore thinks that this axiom will be especially applicable to air conditioning.

In Rio de Janeiro he found two theaters which had been air conditioned, and another in which the cooling system had been taken out because the patrons objected to it!

Buildings in India would have to be reconstructed entirely before air conditioning could be installed, Mr. Moore observes, for most of them are wide open on at least one side.

He doesn't doubt that this will happen, however, for of all the countries on the globe, India needs air conditioning the worst. Also he expects the Dutch East Indies, Straits Settlements, and China to be rich air-conditioning markets some day.

* * *

Diversified Products

St. Louis is also the home of another big electric motor manufacturing concern, the Wagner Electric Corp., which has a huge plant out in the Wellston factory district.

Not confined to the manufacture and sale of electric motors, however, is this organization. Transformers, fans, clutch plates and parts, Comax brake lining, brake drums and materials, and air-actuating equipment for converting automotive mechanical brakes to power brakes.

Wagner also has the official nation-wide service organization for Lockheed hydraulic brakes, supplying parts and fluid out of 25 warehouses located at strategic points throughout the United States.

Wagner's automotive parts division expects big things from its equipment for making mechanical brakes into air brakes.

"It's a coming business," declares Advertising Manager C. B. DIETRICH.

"Comax," Wagner's trade name for brake lining, is taken from the engineering terms "coefficient maximum," which is said to describe this homogeneous, non-compressible, heat-proof lining.

* * *

Boom in Mexico

It is difficult for many of us who have never been there to think of Mexico as anything but a hotbed of guerilla warfare and banditry. Yet T. A. WALLACE, Wagner's export manager, tells us that more air-conditioning business is being done in Mexico City right now than in St. Louis!

It seems that a building boom has been in progress in the Mexican capital during the last year, and that a large proportion of the new buildings are being air conditioned.

Hence, good business.

Carrier appears to be getting most of it.

Mr. Wallace wants us to be sure and look up GEORGE WARBURTON, who manufactures Frigidaire equipment in Sydney, Australia; and L. Y. WOLFE of Refrigerator Components, Ltd., London, England—who, according to Mr. Wallace, really knows everything and everybody worth knowing in refrigeration.

If we get around to seeing everyone who simply can't be missed in London, we'll be there a month.

* * *

78th Birthday

That night Mr. Dietrich was going to spend with his mother, to help celebrate her 78th birthday. She was born in Cape Girardeau, Mo., came to St. Louis at the age of 23, and is "still pretty spry."

Also we met and talked with Wagnerians A. D. POOL of the small motor sales department, and M. H. NELSON of the large motor sales department.

* * *

Nobody Home

A call at the Norge Co. of Missouri (where the Rollator was born, y'ars ago,) produced absolutely nothing but a warming smile from a cheery girl at the information desk.

All the "boys" had gone to Muskegon, where Norge cabinets are made.

* * *

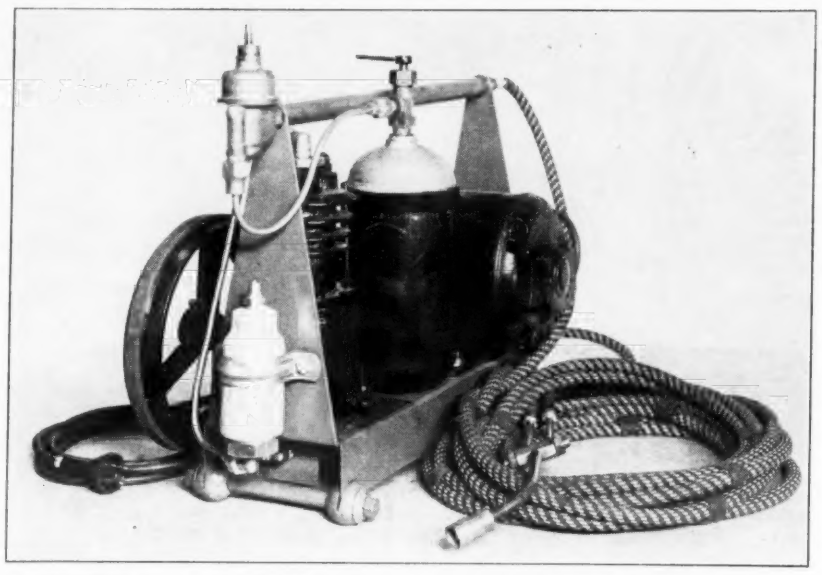
Mr. 'Krack'

Another opportunity for gathering information we missed when we failed to make connections with H. J. KRACKOWIZER, president of Refrigeration Appliances, Inc. ("Krack's Koils Kool").

By sheerest chance Mr. Krackowizer was stopping at the Coronado hotel in St. Louis same time we were.

Got him out of bed to talk to him on the telephone, and made an appointment with him for luncheon the next day; but either we missed him or he missed us.

The New Master Service Unit by Curtis



Curtis Refrigerating Machine Co., St. Louis, has developed this unit for service men. Description of it appears on page one and this page.

How to Succeed: Get Your Price

L. D. JAMES, distributor for General Electric appliances in southern Illinois and Missouri, has a lot of ideas about how to merchandise specialty appliances. But mostly they boil down to one item:

Get your price.

He traces all the evils of the appliance business, all the failures and bankruptcies, and the high turnover of salesmen down to one thing: selling products at too low a price.

Take this business of salesmen, for instance, and their high rate of turnover. Mr. James gets good men—the best, he claims—and keeps them for years. How? Simply by giving them an incentive.

A beginning salesman for James & Co. (which handles all retail business in St. Louis) gets 10 per cent on every refrigerator he sells. If he makes his monthly quota, he gets an additional 2 per cent on that business. Another 1 per cent is added if he attains his annual quota.

In addition, he is eligible for special bonus participation, contest prizes, and other "extras." All in all, a James & Co. salesman has a pretty good thing of it. So he sticks.

"We keep the prices up," smiles Mr. James, "so we can afford to keep good salesmen, and keep 'em happy."

* * *

Getting Ahead

But adequate compensation is not the only inducement which Mr. James dangles before the eyes of novitiates in his organization. He has a steady promotion-to-better-things scheme.

After making quota a number of times, a good salesman is eligible to become a district supervisor, and receive a commission on all machines sold within his jurisdiction.

Following that, he can become a display dealer, with the privilege of putting up "JOHN JONES, Associated with JAMES & Co." over a small shop. Also he gets an override on all machines sold under the jurisdiction of the three or four district supervisors who work out of his store.

For the "lone wolf" type of salesman, the one who is a crackerjack salesman, but who doesn't want to be bothered with the details of supervision or with the training of others, Mr. James has a special deal and a special title: "honorary supervision."

These men work out of the headquarters display floor.

Incidentally, every man in the James & Co. selling organization—including the display dealers—reports at headquarters *every morning* for a short meeting.

* * *

Washing Machines Still A Specialty Business

Back to this business of selling by specialty methods, and getting a price for your services, Mr. James insists that selling washing machines is still a specialty business—although he admits that it's sometimes hard to prove it.

"In 1932 and 1933 all the good washer salesmen were at home, not working," he recalls. "What's more, you couldn't get 'em out of their homes, and to work again.

"These men had it all figured out that the days of *selling* washing machines were all over; that from then on, laundry equipment would be *bought*.

"At that time Sears, Roebuck and the department stores seemed to be getting most of the business by knocking the whey out of previously established prices.

"So I said: 'Nuts to them, let them sell a lot of washers. We'll sell more.' And I convinced the salesmen that I meant business, and they went to work.

"The same situation applies to electric refrigeration. Let the department stores and chain stores sell refrigerators at cut prices. Sure they'll do a big business. But we'll do a bigger business!"

* * *

Replacement Market

One of the fine things about selling washing machines, Mr. James notices, is that replacements provide a sure, steady, annual business of from 650,000 to 800,000 units. At least half the washers his organization sells go out on a trade-in business. Selling used laundry equipment is profitable, too.

Average life of a washing machine, he finds, is about seven years.

* * *

Dishwashers Coming

What about dishwashers? Well, that business is still pretty young. Housewives don't believe in them yet—not enough out in the field.

Wouldn't more promotion help? No, not yet. Dealer promotion, yes; but not consumer advertising. You must have enough dishwashers out *in homes* where women can see them operate, and hear about them, before they'll even notice a magazine advertisement heralding their merits.

Selling dishwashers was not a depression business. People consider an electric dishwasher a definite luxury; and during the depression it hasn't been considered smart—or fashionable—to be buying luxuries, even if one did have the money!

So the dishwasher business is really just getting started. But Mr. James thinks it will be a humdinger once the ball starts rolling. Like the writer, Mr. James looks on the electric dishwasher as his pet appliance.

(*Concluded on Page 6, Column 1*)

Ready to Go to Foreign Ports

(1) H. C. Morrison, sales manager of Curtis Refrigerating Machine Co., St. Louis, shows George F. Taubeneck (center), editor of the News, the stock of condensing units awaiting shipment to foreign countries. L. C. Blake, Curtis advertising manager, is at the left. (2) Mr. Morrison bids Mr. Taubeneck bon voyage as the editor leaves St. Louis on his trip to California before sailing around the world.

T. Irving Potter

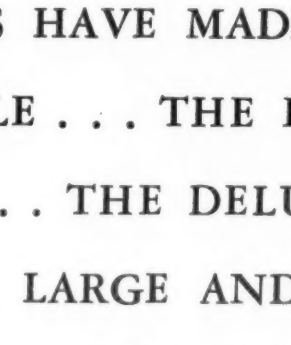
INVITES DEALERS

WHO HAVE RECOGNIZED THE INEVITABLE ARRIVAL OF AIR-CONDITIONING AND FROZEN STORAGE IN DOMESTIC REFRIGERATION AND WHO WANT TO CAPTURE LOCAL LEADERSHIP WITH THE TIME TESTED AND PROVEN LEADER IN THIS FIELD, TO MAKE APPLICATION FOR THE EXCLUSIVE POTTER FRANCHISE IN THEIR CITIES . . . INCREASED PRODUCTION SCHEDULES HAVE MADE INTERESTING PRICE REDUCTIONS POSSIBLE . . . THE ENTIRE LINE IS FULLY AIR-CONDITIONED . . . THE DELUXE MODELS INCLUDE FROZEN STORAGE OF LARGE AND ADEQUATE CAPACITY . . . THE CONSTANTLY GROWING FAMILY OF POTTER DEALERS FROM COAST TO COAST HAS PROVEN THE EXTRA PROFITS AND ADDED SECURITY TO BE FOUND IN THE POTTER FRANCHISE.

*

POTTER REFRIGERATOR

Corporation Buffalo, N. Y.



"The World's Finest Refrigerator"

Around the World

With George F. Taubeneck

(Concluded from Page 4, Column 5)

* * *

Solves Servant Problem

Somewhat surprisingly, Mr. James states that a dishwasher is easier to sell to a home which has a maid than to one which hasn't.

In the first place, a dishwasher helps solve the servant problem. Good "help" doesn't quit in a huff when extra guests are brought in—provided a dishwasher is there to relieve the extra burden.

Mr. James has a complete electric kitchen in his home; and his maid serves 12 persons at dinner, cleans up completely, and is out of the house by 9 p. m. And nary a complaint!

Furthermore, it's simple to demonstrate that an electric dishwasher will conserve hours of a maid's time daily, releasing her to perform other duties. Frequently a second maid can be dispensed with after a dishwasher is installed.

When attempting to sell a dishwasher to a woman who does her own work, Mr. James finds it necessary to leave it in her home on demonstration for more than 30 days.

After that, try to get it out!

* * *

Radios?—!!$!$?

Not long ago James & Co. got into the radio business, with the G-E radio line, of course.

What does he think of the radio business? Ask him. Just ask him!

"Radio is a lousy business; the lousiest we ever were in," he shouts. "It's a blankety blank blank of a blank lousy blank blank business—and you can quote me!"

Bang! crashes his fist on an innocent table.

"Why? I'll tell you why: Because nobody seems to be in the radio business to make a profit, nobody knows how to make a profit, nobody knows whether or not he is making a profit, and nobody seems to give a damn if he makes a profit or not!"

James & Co. sold 25 new G-E radios around Christmas time—at the full price, too, when their customers could have gone downtown and got the same model for less money plus anything from a chicken dinner to a piece of furniture.

"Why," cries Mr. James, "competition in giving away furniture to sell a radio became so swift you could practically get an entire bedroom suite thrown in if you bargained long enough."

Nevertheless, he still believes that radios, like every other electrical appliance, can be sold in volume by specialty methods. But you must get your price!

Letters to the Editor

Buyers for 4000 Shops

Kooperativa Forbundet
Affarsavdelningen
Stockholm

Mr. Taubeneck:

We have duly received your letter of Nov. 26 with regard to your trip around-the-world and have to apologize for not having answered you before.

Although we are not exactly in the refrigeration field, except being large buyers of refrigerators for our 4,000 shops all around Sweden, we should be very pleased if you could give us a call here in Stockholm at our Isoflex factory. Isoflex is a new, startling, heat insulating material, which has a volume weight of only one-fifteenth of ordinary cork board and which is not yet introduced in U. S. A. The product has been on the Swedish market only half a year as a trial and we have found that the market is eagerly accepting this new light weight material, which is also completely unhygroscopic.

We are delivering to the State Railways and the Marines in all the Scandinavian countries. Isoflex is something really new and interesting based on new scientific principles and you will probably hear much of it in the future. We shall be very pleased to receive a visit from you also from other points of view if you are going to visit Stockholm. In such a case would you kindly call Mr. Elfving, Kooperativa Forbundet Isoflexfabriken or Refrigeration Dept., Tel. 40 01 50.

Expressing our hope to see you here in Stockholm we are,

THORE M. ELFVING.

British Motor Makers

Crompton Parkingson, Ltd.
Bush House
London, W. C. 2, England

Editor:

We should be very pleased indeed to see you here in London when you visit England in 1936.

My company is one of the leading British electric motor manufacturers and we have particularly specialized in the manufacture of motors for refrigerator duty.

We are in close touch with all the leading refrigerator manufacturers and importers in this country, and at this time we are supplying a considerable proportion of the refrigerator motor requirements. These points are mentioned so that you may appreciate our place in the picture in-so-far as it affects the contact you will make on your business trip.

If you could give us a little advance warning of the date of your call, the writer, who is in charge of our fractional motor sales, would make a point of keeping this date free.

Our works are at Chelmsford which is situated about one hour's journey from London and we believe that if you could manage to spare the time you would be very interested to investigate our methods of production of the motors we are building for refrigerator duty.

The demand for our motors has increased so rapidly that it has necessitated us developing a complete new production layout and we believe that this layout, which should be in full working order by the time of your visit, is one of the finest examples to be found of modern small motor production.

We certainly hope you will try and find time to visit us.

C. A. J. MARTIN, General Sales Dept.,
Crompton "Minor" Section.

Greetings from Amsterdam

Mijnssen & Co. N. V.
Keizersgracht 205
Amsterdam, Holland

Editor:

We shall be very glad to see you in Amsterdam when you are visiting our country. MIJNSSEN & Co. N. V.

Tadema & Pijttersen's
Stadhouderskade 91
Amsterdam, Holland

Editor:

We should like to inform you that we shall gladly meet you on your visit here in 1936.

TADEMA & PIJTTERSEN'S.

Electric Kitchens Wanted in Tunis

(Translation)
Etablissements Leclercq
27 rue Blanche, Paris
37 Avenue de Carthage, Tunis

Mr. Taubeneck:

We have received your letter of November 27, and ask your pardon for not replying sooner, the undersigned being away from Paris at the time of the arrival of your letter.

We are very glad to learn that you are contemplating paying us a visit on the trip that you are going to make. We believe that in spite of the economic depression, which was still marked in France and in the French colonies during the course of this year, your trip will be profitable to you in that you will learn the exact needs of our country.

If domestic refrigeration has developed in the course of these last few years, there is still a great deal to do in the matter of commercial refrigeration and air conditioning. Up to the present time, air conditioning has been installed only in some of the large moving picture houses, and has not yet been used in private or commercial practice.

There is here, we believe, much educating to be done, and it is necessary to take into consideration the fact that France is a temperate country. Moreover, it must not be forgotten that air-conditioning equipment is still very expensive. An economic revival will be necessary in order to favor the development of this kind of business.

We have attempted to import some portable air-conditioning equipment into Tunis, but have not been able to make an installation.

The undersigned will be at your disposal for furnishing you with all the information that you will need and will be particularly happy to meet you in Paris as soon as you arrive, if you will let us know when you expect to be here.

We wish to call to your attention that we wrote you under date of November 20 asking for the names of some manufacturers of electric kitchens, but we have not yet received any reply. Perhaps our letter was mislaid.

We shall be equally glad to learn about innovations taking place in the American market, as they appear.

We are agents of the Sparks-Withington Co. in Jackson, Mich., and have been dealing with the Ilg Ventilating Co., 2850 Crawford Ave., Chicago.

We should also appreciate receiving offers on ice cream freezers of small capacity, equipped with mixer and compartments having a capacity of from 30 to 100 liters. It is necessary that these freezers be reasonably priced in order to compete with English manufacturers.

When you have settled on the trip that you are going to take, if you wish to ask any definite questions, we shall be pleased to answer them. In closing, we should like to say that the French market should become interesting for refrigeration, as well as the Spanish market.

P. LECLERCQ.

An Ode to Winnie

International Radio Co., Ltd.
178 Rundle St.
Adelaide, South Australia

Editor:

Just a few words of appreciation on your very interesting Personalities Page, referring particularly to the John H. Patterson series. This was indeed most educational, and for he who stops to think must be of immeasurable benefit.

In your issue of Oct. 9, was a little bit of sales advice by your Winnie Hughes, so as I could not resist taking a slight pot shot at her, here it goes:

Your little Winnie may be right
About a salesman getting tight.
Advice most surely to be noted
As it is nicely sugar coated,
But when she talks about sweet dreams
I hear some million anguished screams
Of tortured salesmen everywhere,
Who do not dream but just nightmare.
Adventure perhaps but truth content?
Now this will cause much argument.
Contented salesmen don't survive
Ambition is the only drive,
Still after all we get our fun,
And when our daily toil is done
We'll sit and balance on our knees
The page of "Personalities"
ELECTRIC REFRIGERATION NEWS
Assistance we cannot refuse
I'm blaming your Miss Winnie Hughes
For this here rhyme so "please excuse."

With best wishes for your very progressive paper,

HAL T. M. LYNE, Branch Mgr.

Welcome from London

H. Kaufmann, Ltd.
Winton House, St. Andrew St.
London, E. C. 4, England

Editor:

If you will let us know the exact time you propose to visit us, one of our directors will be pleased to see you, and give you all the information you may require.

If you are at all coming to this country, you will have to come to London, and all the other places where refrigerators are made are within easy reach from London.

A. DICKSON.

Smithfield Refrigerator Co., Ltd.
High Street, Hornsey
London, N. 8

Editor:

We shall be very pleased to see Mr. Taubeneck, and show him around our factory when he is in London next year.

We are concerned solely with the building of commercial size cold rooms (not domestics or refrigerating machines) and we can show him some things of interest concerning enameled steel cold rooms which are our specialty.

W. HORACE PARTRIDGE, Director.

Bon Voyage

Norge Division
Borg-Warner Corp.
670 E. Woodbridge St., Detroit

George:

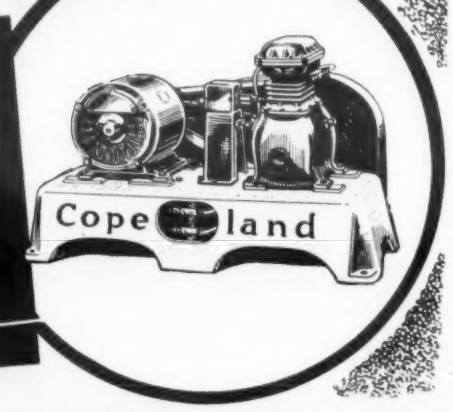
Thanks a lot for the snapshots which you sent in. I appreciated getting them.

I note that you are leaving on a Round the World trip very soon. My best wishes for a successful and interesting trip. JOHN H. KNAPP,
Vice President in Charge of Sales.

Minute Movie

of the St. Louis visit. George Taubeneck chats with Oliver Imes, advertising manager of Century Electric Co., and gets the "local angle" on refrigeration sales from L. D. James, crack G-E distributor.

performance that Satisfies AFTER THE JOB IS SOLD!



COPELAND Commercial REFRIGERATION

COPELAND Commercial Units are precision-built to make sure of long trouble-free performance. They SELL on performance; they SATISFY on performance after the jobs are sold. Many well informed volume buyers of refrigerating equipment in the chain store field, and elsewhere, know how exceptionally Copeland performs, and they have standardized on this fine equipment. A few distribution franchises are available. Write us.

COPELAND REFRIGERATION CORPORATION
Manufacturers of a complete line of Household and Commercial Refrigeration
Holden Ave. at Lincoln . . . DETROIT, MICH.

Copeland DEPENDABLE Electric REFRIGERATION

SOME PROBLEMS ARE AS SIMPLE AS "TWO-PLUS-TWO" . . . WHEN YOU USE

V-METH-L VIRGINIA SMELTING
(Virginia Methyl Chloride)

It will give sub-zero temperatures and still maintain above-atmospheric pressure. This of course means that any mechanical equipment will do *more freezing* when charged with V-METH-L, than with a refrigerant of higher boiling-point.

Made by the makers of EXTRA DRY ESOTOO, V-METH-L is stocked at 66 convenient distribution-points in the United States and Canada; prompt deliveries are assured. The coupon will bring helpful literature.

VIRGINIA SMELTING CO.
WEST NORFOLK, VIRGINIA

Mail Coupon Now!

F. A. Eustis, Sec'y, Virginia Smelting Co., 131 State St., Boston, Mass.
Send me the literature I have checked. I am interested in receiving any additional literature on Electrical Refrigeration you may issue from time to time.
☐ Folder: Extra Dry ESOTOO (Liquid Sulphur Dioxide) E-24-36
☐ Folder: V-METH-L (Virginia Methyl Chloride)
☐ Folder: Transferring from large to small cylinders
☐ Circular: Physical properties of various refrigerants
(Write name and address in margin)

G-E District Heads Attend Conference

BRIDGEPORT, Conn.—District appliance sales managers from 15 sales districts of General Electric Co.'s appliance and merchandise department met for a four-day sales conference with company officials Jan. 6-9 here. Speakers included division and sales section managers and representatives of the G-E field organization.

The meetings were presided over by P. B. Zimmerman, general manager of appliance sales; D. C. Spooner, manager of the home laundry equip ment and cleaner sales division; R. W. Turnbull, manager of the traffic appliance sales division; and R. J. Cordiner, manager of the radio sales division. The last day's session was devoted to a meeting of the district appliance sales managers and G-E radio specialists.

Talks by Vice President C. E. Wilson, J. L. Busey, president of G-E Supply Corp., and R. M. Loughrey, district appliance sales manager, Portland, Ore., were features of a dinner at which Mr. Zimmerman acted as toastmaster.

Managers who attended the conference were: M. B. Connolly, Boston; Earle Poorman, New York City; A. C. Sanger, Philadelphia; R. P. Van Zile, Atlanta; J. A. Ramsey, Buffalo; A. G. Chaffer, Pittsburgh; R. A. Shackleford, Cleveland; J. S. Strecker, Chicago; C. R. Thorson, Minneapolis; R. V. MacDonald, Kansas City; F. W. Wheeler, Dallas; E. W. Brown, Salt Lake City; G. S. West, San Francisco; F. M. Slasor, Detroit; and Mr. Loughrey.

Frantz Again to Head Washer Association

CHICAGO—C. G. Frantz of Apex Electrical Mfg. Co., Cleveland, was re-elected president of American Washing Machine Manufacturer's Association at the organization's annual meeting here recently.

For the twenty-seventh consecutive year, William H. Voss of Voss Bros. Mfg. Co., was re-elected treasurer, and Walter K. Voss of the same company was again named assistant treasurer.

Vice presidents elected were L. S. Upton, Nineteen Hundred Corp.; George M. Umbreit, Maytag Co.; and A. H. Labisky, Barton Corp. Members of the new executive board include Edward N. Hurley, Jr., Electric Household Utilities Corp.; S. S. Holland, Holland-Rieger Co., in addition to the president and vice presidents.

Hotpoint Names Eight District Managers

CLEVELAND—Eight district representatives have been named by the Hotpoint refrigerator division of General Electric Co. to assist the sales organization, Harry C. Mealey, division manager, reported last week.

The appointees and their respective headquarters are:

F. L. Sacha, southeast district, Atlanta; W. L. Sayre, New England district, New York City; E. F. Morford, north central district, Cleveland; H. G. Wilds, middle Atlantic district, Philadelphia; E. H. Bryant, middle western district, Chicago; Lee McLeod, southwestern district, Dallas; S. C. Griswold, western district, Kansas City; A. A. Nerling, Pacific district, San Francisco.

Bancredit Denies FHA Replacement Plan

ST. PAUL—Reports that First Bancredit Corp. had formulated a plan for financing retailer appliance sales, which it would put into operation if Title I of the Federal Housing Administration Act which expires April 1 is not renewed, were denied by company officials here.

One plan for department stores and another for appliance sales for utilities was said to be part of the Bancredit program. A continuation of operation on the same basis as the present one in handling transactions under the FHA modernization credit plan was also reported.

Buffalo Salesmen Tie Story Up with Advertisements

BUFFALO—To tie in national advertising with its selling work, the Buffalo General Electric Co. used copies of *McCalls* magazine containing Westinghouse advertisements as central figures in window displays in its 11 stores in this city.

Copies of the magazine were also arranged on counters inside the store, and salesmen were provided with copies for use in their sales talks.

Cooper Opens New Store

CHICAGO—R. Cooper, Jr., General Electric appliance distributor here, has opened a new store at 7829 S. Halsted St. D. McGillivray is in charge.

FROM THE POLES TO THE EQUATOR

IS ONLY ⟷ THIS FAR

in a refrigerator

Your refrigerator must make for its owner a frigid zone in a tropical kitchen. There is frequently a difference of 60 degrees or more between the temperature inside and outside the box. No matter how hot the room may get, your unit is expected to pull down the inside temperature to a safe, protecting range.

Any good refrigerator will do this. But how economically it does so depends on the vital efficiency of that thin wall that separates these two temperature zones.

Many materials appear to satisfactorily check the flow of heat through this space when the cabinet is new. But after a period of use a new factor begins to affect the efficiency of most materials used for insulation.

Moisture!

For with so great a difference in temperatures on opposite sides of this shell, and water vapor steadily penetrating it despite so-called moisture seals, there is bound to be a point of condensation within the wall, just as moisture condenses on the sides of a cup of cold spring water on a hot summer day. This moisture soaking into most materials more and more completely destroys their insulating efficiency. Only "non-hygroscopic"—that is, non-absorbent—insulation is unaffected by this phenomenon of physics.

And that is why Dry-Zero in any refrigerator saves from 30c to $2 a month in operating costs. Dry-Zero is non-hygroscopic. It is unaffected by moisture that inevitably gets into the walls of any refrigerator in use. It enables the unit to keep proper inside temperatures economically. And for the entire life of the refrigerator.

A complete story of exacting tests made on a number of refrigerators in the famous Dry-Zero laboratory will show you just what effect moisture has on operating efficiency. If you are interested in it, write for a copy. It will be sent without obligation.

DRY·ZERO
REG. U.S. PAT. OFF.
THE MOST EFFICIENT
COMMERCIAL INSULANT KNOWN

Dry · Zero Corporation • 222 North Bank Drive CHICAGO, ILLINOIS • 687 Broadview Ave. TORONTO, ONTARIO

ELECTRIC
REFRIGERATION NEWS

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Foreign Trade

ECONOMISTS have pointed out that the difference between good times and bad is really a modest percentage of the total volume of business done by the nation annually. They have further observed that the health of our export business can be considered as one of the deciding factors in determining whether business volume and employment will be normal or sub-normal.

That the world-wide scope of the great depression through which we appear to be emerging was in no inconsiderable measure responsible for America's domestic financial difficulties is conceded by many commenters upon the situation. (In 1932 the export business of the United States was only one-third of its export volume in 1929.) And the fact that many foreign nations have fought their way upward from the depths has been reflected in the rise of the American business curve — this year, especially.

Other nations are realizing the vital part that the free flow of trade between countries plays in the world's prosperity, too; and as a result we have the movement toward reciprocal trade agreements, by which tariffs are being reduced on various classes of goods by friendly trading nations.

The endorsement given this policy of reciprocal trade agreements by the representatives of 39 nations at the Congress of the International Chamber of Commerce at Paris signals a significant change in world opinion—which has been so intensely nationalistic in the last few years that world trade has been damagingly impeded—on the question of trade barriers.

It appears now that this trend toward reciprocal tariff reductions is coming at a highly advantageous time for the electric refrigeration industry of the United States. Saturation of the domestic market has been progressing apace; and while the wired homes which remain without the services of electric refrigeration are yet so numerous that business should be good here for years and years to come (not to mention the replacement market, which should become seriously important by next summer, at least, and which will no doubt increase in consequence as the years go on), it does seem likely that manufacturers will soon be able to devote more of their attention and *thinking* to the development of the export market.

Refrigeration saturation of such fertile markets as England, Australia, the Dutch East Indies, India, France, Italy, Belgium, Holland, and the Balkan states is as yet comparatively infinitesimal. South Africa and Palestine have suddenly emerged as very rich markets for American refrigeration equipment. But the truth of the matter is that American manufacturers have been so busily occupied with taking care of their extraordinarily good business at home that they haven't had the time or the inclination to study conditions abroad sufficiently to capitalize adequately upon the possibilities that the export business holds forth.

Exceptions to this rule have been some of the smaller manufacturers which, almost hopelessly outdistanced at home by the promotional campaigns of the leaders, have seized the opportunity to enter the much less competitive markets which have been existing abroad.

Meanwhile public acceptance of the idea of refrigeration has been gaining a foothold in lands which before have never even utilized ice for preserving foods. This interest in refrigeration which has been slowly rising in foreign countries has been reflected in the mounting tide of letters—and subscriptions—to the NEWS from business men located in commercial centers all over the world.

It is to report this highly promising situation that the editor of ELECTRIC REFRIGERATION NEWS has embarked on a trip around the world, visiting the leading prospective markets for American electric refrigeration equipment. He will attempt to learn who is buying, or ready to buy, American refrigeration products; just what types of equipment are best adapted to the needs of prospects in different countries; and what are the merchandising methods which seem to be the most effective.

To the NEWS it would appear that this trip is timed just about right; just as it also appears that the export business is looming up as something potentially big at almost precisely the right moment to take up the slack in sales pioneering which will attend further saturation of the domestic market.

"Quoted"

HERBERT COREY, in *Public Utilities Fortnightly*, quotes TVA trustee David Lilienthal as saying that 98 per cent of the farmers in TVA territory have no electric service and that if they were furnished with electric current at a low cost they could absorb "all this surplus we have been talking about." He then proceeds to delve into figures, as follows:

In the five states, Kentucky, Tennessee, Alabama, Georgia, and Mississippi, there are 1,317,812 farm dwellings of which 676,028 have a value of less than $500 apiece. In the four states of Kentucky, Tennessee, Alabama, and Mississippi, there are 1,062,214 farm dwellings of which 741,255 are occupied by whites and 320,959 by colored. Nearly 60 per cent of all farms are operated by tenants.

Major Ezra Whitman (engineer) tells Mr. Corey that 33 large companies within a 200-mile radius of the TVA plant have an installed capacity of 5,341,389 watts of which 4,000,000 are "firm." This does not include small plants nor the plant of the Aluminum Co. which account for 565,000 watts additional. He assumed that every farmer in the five states with an income of $1,000 annually would by 1940 be a TVA customer. He reckoned that each would use 1,450 kwh. per annum. He reckoned that the small town domestic customers would be nearly doubled in number and would each consume 1,200 kwh. per annum. He made similar assumptions of increase in commercial and industrial use, and of increase in municipal, street railway, and company use and loss. Adding all these up there would be a requirement for a generating capacity of 3,490,000 watts against the above firm capacity of 4,000,000.

The above assumptions would require the five TVA states to have more electrically equipped farms than now exist in the United States and a kwh. consumption per farm almost double the present average farm consumption. Major Whitman also estimates that on an interest basis of 3½ per cent the cost to TVA of producing power would be (on the basis of 367,000,000 kwh. prime power) $44.20 per kilowatt-year against the TVA estimated cost figures of $19.50.

—*The Wall Street Journal.*

Letters

Refrigerator Retirements

Philadelphia Electric Company
1000 Chestnut Street
Philadelphia

Publisher:

I am interested in your method of estimating refrigerator retirements.

This is not a quarrel with your estimate, and it follows the digestion of your January 8 ELECTRIC REFRIGERATION NEWS editorial.

In tabulating electric refrigerator saturation in the Philadelphia area, I have habitually estimated retirements as offsetting sales six years earlier. This has given cumulative retirements (in per cent of cumulative sales) that see-sawed with the national average as published annually in the NEWS—until a year ago. As for the end of 1934, the estimated retirements in the Philadelphia area tallied 29,250 against cumulative sales in the amount of 224,430. Curiously enough, this 13 per cent retirement figure coincides with the ELECTRIC REFRIGERATION NEWS national figure, which in round numbers, I believe, was 875,000 retirements on cumulative *retail* sales of approximately 6,744,000.

Recognizing that few refrigerators are so unsatisfactory as to be discarded in the first few years of operation, and conversely, that a relatively small percentage have survived after 10 years of operation, our Statistical Department has set up an arbitrary retirement forecast as follows—based on seven years' average life.

Estimated Retirements	Year of Life
0.4%	Fourth
5.4%	Fifth
24.2%	Sixth
40.0%	Seventh
24.2%	Eighth
5.4%	Ninth
0.4%	Tenth
100%	

Because of the uncertainty as to the entire matter of retirements, I would like to benefit by any comment that you care to make as to your own manner of basing estimates. We realize that improvements in the art should develop an increasing average life. This perhaps accounts for the diminishing average national estimate (E. R. NEWS) of annual retirements from 1932-1934 (376,000—1932, 360,000—1933, 75,000—1934), but is belied by the 1935 estimate (142,000).

If this letter accomplishes nothing else, it will convince you that I read the NEWS with the same meticulous care that is evidenced by many of your subscribers, who, like myself, consider it an outstanding trade publication.

WM. R. M. VERY,
Director, Air Conditioning and Refrigeration Division.

Answer: We are keenly interested in your calculations showing an average life of *seven years* and would like to know if this estimate is based upon a reliable survey. If there are records available showing the number of units which have been junked in the Philadelphia area, it would be very enlightening if the *types* or *makes* of units could be revealed.

We have had the notion that the *average* life of household units would run at least *10 years*, and we know that some of the industry statisticians figure it to be *12 years* or more.

Our own estimates have not been based on *averages* since there are no records, so far as we know, which would serve as a reliable indicator of the actual size of the junk pile.

In trying to arrive at an estimate of the number which have been counted into *sales*, but which are no longer *in use*, we have taken in consideration such factors as the production (by certain defunct companies) of machines which did not "hold up" in service, the output of very *cheap models* during the price cutting epidemic a few years ago; the replacements of multiple systems; and the depression effects upon apartment house maintenance of equipment.

In general, we are inclined to believe that *averages* will be misleading until such time as the replacement market is studied more closely by distributors and dealers.

The fact that nearly all sales effort up to the present time has been directed toward *new* users seems to indicate that a very large percentage of the refrigerators now in use are still giving service. This view is supported by reports that few salesmen have *"had the nerve"* to try the job of selling housewives on the idea of ditching the old unit in favor of a new model.

Favors Small Payments

Duquaine's Automatic
Refrigeration Sales
Marinette, Wisconsin

Publisher:

At this time, which is the beginning of the new year, I wish to express my opinion regarding the National Housing Act pertaining to retail sales of household and commercial Frigidaire as well as other appliances we handle.

A lot has been said for and against the National Housing Act but according to my experience in the last 6 to 8 months that we have gotten active on making use of this outlet for our retail papers I would say it has increased our business 100 per cent. This I consider purely due to the National Housing Act.

I have been in the retail specialty selling for about 15 years and have made use of time payment plans ever since GMAC accepted papers on Delco plants and have had little or second to no repossessions through the years of depression. This of course, is due to accepting only reasonably good papers and am using the same cautions in accepting papers for the National Housing Act. The difference which I feel between the National Housing Act and other finance plans is in the first place the rate is considerably lower and the terms are longer and my experience has been that selling a product to a customer and obligating him to too large a monthly payment is what causes them to become delinquent while contracts that are made on low enough monthly instalments so the customer can make them without hardship are usually made without delay.

I might mention at this time we have sold small household refrigerators in a town where common labor ranges from $12 to $14 a week and had no trouble making collections with those people. The payments run from $5 to $8 per month while if they had to pay $15 and $16 per month it might have been impossible. These are some of the reasons I hope the National Housing Act will be permitted to continue.

WM. DUQUAINE.

In the Market

American Gear & Parts Co.
412 E. Wells St.
Milwaukee, Wis.

Editor:

We have for the past year carried in conjunction with automobile parts and supplies, five or six lines for the servicing of the refrigerator repairman, such as refrigerator fan belts, copper tubing, compressor parts, etc.

We would like to have you send us a complete list of manufacturers serving the jobbing trade with parts and supplies with refrigerators and air conditioning.

In addition, we would like to have you give us a list of the most important lines of parts and supplies to service this field, in the order of their importance. We are figuring on augmenting our present line with the more essential lines that we do not have, and shall appreciate this or any other information you can give us.

We would also like to have you send us one or two copies of your paper; also subscription blank covering your paper. J. W. MCMANUS, Pres.

Answer: We would first suggest that you obtain a copy of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY which will give full information regarding the various sources of supply.

We also recommend that you obtain a copy of the new MASTER SERVICE MANUAL, which will be off the press within a few days. This MANUAL contains the advertisements of the companies most interested in selling replacement parts and supplies through jobbers and independent service companies.

The above books sell for $3.00 per copy, or $5.00 for two books, if cash is sent with order.

The subscription price of the NEWS is $3.00 per year. Please note, however, that you can obtain the NEWS and *both books* at combination rate of $6.50.

Nema Will Draft Model Local Ordinance

Refrigeration Division
National Electrical Manufacturers Association
1106 Penobscot Bldg., Detroit, Mich.

Publisher:

I have noted with interest the first item under "Letters" in your current issue, regarding ordinances. I thought I ought to tell you that a committee of the American Standards Association on which we are represented, has been working for some time on a revision of the old S.A.A. Safety Code to bring it up-to-date in the light of present conditions in the industry.

At the request of this committee the Nema Uniform Legislation Department has prepared a draft of a municipal ordinance to tie in with the revised Safety Code. This first draft is now being considered by our Technical Committee. They will probably have some changes to suggest and it will then be submitted to our members at their next meeting in March. I am sure that in the light of the above information you will not want to work at cross purposes with what we are doing.

HALDEMAN FINNIE, Manager.

Answer: This is *welcome news*. We were aware, of course, of the perennial revision of the Safety Code, but we did not know that Nema was working on an ordinance which would help service men translate their aspirations into law.

Comment
By F. M. Cockrell

Visitors Record

Among recent visitors to the office of the NEWS were:

Charles W. Johnston, general manager of the Virginia Smelting, West Norfolk, Va., and Frank J. Gleason, executive secretary of the Refrigeration Supplies & Parts Manufacturers Association. They were working on plans for a joint meeting of the *directors* of the Manufacturers and Jobbers Association to be held at the Palmer House in Chicago next Wednesday, Jan. 29.

That is the week of the Heating and Ventilating exposition in Chicago so it looked like a good time to get the leaders of the two new associations together for a pow-wow on ways and means to promote cooperation between the parts manufacturers and jobbers.

* * *

A Motion by the Chairman

According to a rumor which, of course, did not come from these gentlemen, there is a movement on foot in the manufacturers association to appropriate a sum of money sufficient to buy one copy of Roberts Rules of Order.

I understand that some of the members want to find out what to do when the *chairman* of the meeting decides to "make a motion," also they would like to know whether it is really true that "a motion to *adjourn* is always in order."

Charles W. Johnston, mentioned above, contributed the following clipping for the paste-pot-and-shears editor but, overlooking our meticulous regard for copyright and credits, forgot to make a note of the publication which originally printed the verses.

* * *

Stretching the Alphabet

Unless those New Deal Democrats
Stop pulling bureaus out of hats,
I fear that soon we'll have to get
A new and larger alphabet.

Now what this country needs today
Is less and less of N. R. A.
B. U. N. K. and E. T. C.
But more and more of C. O. D.

For in the distant bye and bye
Somebody has to P. A. Y.
For all the jack the U. S. A.
Is handing out so free today.

Our star of hope is growing dim,
We'll soon be on the B. U. M.
We'll struggle, starve, and break our necks
To pay the Federal T. A. X.

Unless I make an N. G. guess,
It's time to sound an S. O. S.
And stop this flood of I. O. U.
And I mean stop it P. D. Q.

So I beseech you F. D. R.
Don't stretch the alphabet too far,
My shirt is gone—now listen, please—
Don't take away my B. V. D.'s.

WILLIAM SHAKESPEARE II.

* * *

We Violate an Ordinance

W. F. Mercier of Mercier & Clark, refrigeration service company of Detroit, called to discuss problems of the Detroit Refrigeration Contractors Association.

I told him about the city inspector who called at our place recently and served notice that we should have a *licensed operator* in charge of our 7½-hp. air-conditioning compressor (which is now pumped down and standing idle).

Personally, I do not see how the development of the air-conditioning business is going to be helped by imposing such restrictions on equipment which is designed to work *automatically*.

Perhaps my feelings in the matter are influenced by the fact that we paid a fee to the city for the inspection of our installation, but the inspector failed to note a leak in the system which resulted in losing over one hundred dollars worth of Freon.

* * *

New York Newspaper Publicity for Bennett

E. L. Bennett, vice president and general manager of the Electric Invisible Kitchen Co. of Chicago, paid us a visit and reported that his recent advertisement in the NEWS had "brought inquiries from really high-grade companies" and that their exhibit at the recent Hotel Exposition in New York City also brought excellent returns.

New York newspaper writers were much intrigued by the equipment which the Chicago concern has devised whereby an unsightly and old-fashioned hotel *bathroom* may be turned into a modern kitchenette.

Mr. Bennett, who belongs to that school of publicity whose creed is "we don't care what they say, so long as they *say something*," proudly display-

(*Concluded on Page 9, Column 1*)

Comment

By F. M. Cockrell

(*Concluded from Page 8, Column 5*)

ed a poem which appeared in *The Conning Tower* of the New York *Herald-Tribune*.

After razzing the bathroom-kitchen quick-change outfit, through two long verses, the poem winds up as follows:

"I always viewed with interest, and
I greeted with loud cheers
The intricate contraptions of our
brainy gadgeteers;
I applauded each invention and each
chromium device—
But now I see that progress some-
times costs too dear a price:
I only ask these bright young men to
stick to rules of math,
And leave old fogies like myself a
place to take a bath!"

* * *

New Treaty Needed

There should be a new trade treaty between New Zealand and the United States, according to J. H. Reynolds of Auckland, New Zealand, who visited Detroit recently and gave an interview to one of the daily papers.

In the matter of New Zealand imports, United States ranks immediately after the United Kingdom and is followed by Australia, then Canada.

New Zealand offers a substantial market for a wide variety of American products, according to the visitor. He recommends that business concerns have their own representatives in that country according to the practice of successful British firms.

One of the obstacles to easy trade relations is that foreign concerns wishing to import catalogs for their representatives must pay a duty of one schilling and six pence a pound.

It surprises many people to know that New Zealand is 1,200 miles from Australia and has no political connection with that continent.

* * *

Soot in His Lungs

"Autopsy surgeons can spot a lifelong city-dweller by the accumulation of soot in his lungs. The effect of this on health remains unknown, but there is no doubt that coal smoke is a costly nuisance," according to Dr. Clifford Cook Furnas in his book entitled "The Next Hundred Years: The Unfinished Business of Science," one of the two January choices of the Book-of-the-Month Club, as reported in the Dec. 30, 1935, issue of *Time*.

* * *

A 50-Word Selling Talk

The day before George Taubeneck started for the Pacific Coast on his trip around the world, we got worried about the bad weather and the short time available, so I suggested that it might be a good idea for Bob Nixon, assistant business manager, to go along *as far as Dallas, Tex.*, to take turns at the wheel.

Bob jumped at the proposition as if driving a car several hundred miles through a snow storm would be no hardship at all.

George wired reports from St. Louis and Dallas, Tex., then came a message from Bob at *El Paso*. In 50 words he gave all the reasons why it would be a good idea for him to go *on to California*.

It was the best piece of *sales promotion copy* he has written since joining the staff last July. I was *sold* at once and sent more expense money by air mail.

* * *

Devotion to Duty

According to a message received last Saturday, they had arrived in San Diego after *driving 23 hours in one stretch.*

All of which proves that the young men on the NEWS staff devote themselves to duty without regard to hours, union rules, or personal comfort.

Weather, time, and distance mean absolutely nothing to them—especially when there is a chance to go to *California* or make a trip *around the world.*

Seriously speaking, it is a fact that the people on the NEWS staff are always ready to go anywhere, anytime.

"GENUINE DETROIT"
HEATING, REFRIGERATING AND AIR CONDITIONING CONTROLS
DETROIT LUBRICATOR COMPANY
DETROIT, MICHIGAN, U.S.A.
Canadian Representative—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

Apex Uses Dulux as Finish on '36 Line

(*Concluded from Page 1, Column 3*)

ing. Door latch and hinges are of heavy brass, finished in chromium, and the door opening is cushioned with balloon gaskets of live rubber. Door latch is of the push-pull type.

Smallest model in the line, the A-430, has a storage capacity of 4.3 cu. ft. and a shelf area of 9.3 sq. ft. It has two single ice trays, capable of producing 56 large cubes or 4.4 lbs. of ice, per freezing. The unit is 51⅞ in. high, 22⅝ in. deep, and 23¾ in. wide.

Model A-600, next in the line, has a capacity of 6 cu. ft. and a shelf area of 12.1 sq. ft. It has two single and one double-depth ice trays, with a capacity of 87 cubes or 6.6 lbs. of ice per freezing. Dimensions of this model are: height 54¾ in., width 28½ in., and depth 24½ in.

Model A-650, only slightly larger than the previous unit, has a capacity of 6.5 cu. ft. and a storage area of 12.4 sq. ft. Its ice cube capacity is the same as that of the A-600. Dimensions of the unit are: height 55⅞ in., depth 25½ in., and width 32½ in. Model A-650 is the first of the line which has a door on the freezing compartment. Other features of the model are Shelf-X criss-cross flat ribbon shelves, rearranging shelf, sliding fruit basket, and vegetable bin.

Largest model in the line, the A-785, has 7.85 cu. ft. storage capacity, and a shelf area of 16.3 sq. ft. It has five ice trays, with a capacity of 135 cubes or 10.6 lbs. of ice per freezing. One of the trays is double-depth, for frozen desserts. All convenience features of the A-650 are included in this model, which is 59½ in. high, 25½ in. deep, and 32½ in. wide.

The features include a Food Finder, equipped with egg rack, butter and lard compartment, fresh vegetable pan, and three covered glass dishes for left-overs; a double-deck fruit basket, which slides forward, located in the top of the refrigerator cabinet near the freezing compartment; a rearranging shelf, which slides out for use; automatic interior electric light, and a vegetable bin in the base of the cabinet and in front of the refrigerating unit, which gives extra storage space for vegetables and bottles.

Three covered "keep-cold" dishes, with water jug to match, are other convenient additions to the two larger models in the Apex line.

Ice trays in all units are of stain-resisting anodized aluminum, and all models, with the exception of the A-430, are equipped with one all-rubber tray. Other ice trays are easily removable with an ice tray jack which is furnished with all models.

Cold control has nine operating adjustments, including a quick-freeze adjustment, vacation setting, and semi-automatic defrosting.

Harrison New Head of Jersey Leagues

EAST ORANGE, N. J.—Philip H. Harrison, president of Philip H. Harrison & Co., New Jersey distributor of General Electric appliances, has been elected president of the New Jersey Council of Electrical Leagues for 1936.

The council represents 11 electrical leagues located in various parts of New Jersey and functions as a clearing house for cooperative promotions undertaken by the leagues.

Other officers are: vice president, G. J. Redmond of Public Service Electric and Gas Co., Hackensack; treasurer, F. F. Horning of R.C.A. Victor Corp., Camden; secretary, C. R. McCollum, dealer in Gladstone, N .J.

On the executive committee are H. P. Litchfield of Newark, J. H. McQueston of Camden and M. L. Pusey of Trenton.

100 Companies Cooperate In FHA Exhibit at Baltimore

BALTIMORE — Approximately 100 firms dealing in household equipment cooperated with the Federal Housing Administration in presenting the Baltimore National Home Show to 50,000 visitors during the week of Jan. 4-11. The show marked the first in a nation-wide series to be sponsored by the FHA in conjunction with local retailers.

A $6,000 seven-room house of Maryland design, complete with the most modern equipment, formed the center around which the 158 display booths were grouped. FHA officials estimate a possible million dollars worth of insured mortgages as a result of the show.

Refrigerators and air-conditioning equipment, together with oil burners, wood finishing, washing machines, mangles, ranges, telephones, and other home conveniences lined the walls of the armory, where the exhibit was held. Although some refrigerators were displayed by the manufacturers themselves, most were on display through local distributors of products in cooperation with leading retailers.

Snyder Heads G-E Newly Organized Home Bureau

NEW YORK CITY—To coordinate more effectively its services for the benefit of architects and prospective home-builders, General Electric Co. has formed the General Electric home bureau, with headquarters in the G-E building here. Carl M. Snyder has been named manager of the new department.

The bureau will furnish an advisory and sales service to architects, engineers, and others desiring a complete check of specifications affecting adequate wiring and lighting layouts, heating and air conditioning, electric kitchens, laundries, and other general divisions represented by G-E products manufactured for the home.

Need for Coordination

In common with a number of companies merchandising a variety of products for the home-building industry, General Electric has recognized the desirability of coordinating its services for prospective builders, in setting up the bureau, Vice President C. E. Wilson announced.

This centralization of services will not conflict with the specific obligations of individual departments to their customers, Mr. Wilson said. It was also pointed out that the company in no way contemplates an architectural planning or building operation, and that services will be limited to consultation only with architectural and building professions.

The bureau is an outgrowth of the G-E "demonstration homes" erected throughout the country last year. Visitors to these indicated their keen interest in the advancement shown in home-building as evidenced by better planning, more intelligent coordination of indoor and outdoor living, and more complete use of mechanical and electrical devices for comfort, health, and convenience.

Program Brings Confidence

The demonstration program, which followed a successful architectural competition conducted by G-E last year, aided greatly in bringing confidence and new life to the residential building market, company officials believe, and contributed another incentive to the drive of both Federal agencies and private enterprise to bring about a normal resumption of home-building.

Mr. Snyder, manager of the new bureau, was graduated from the school of architecture of Syracuse University in 1917, and after service in the World War was architect of a large construction project in Syracuse. Later he became interested in electric appliance manufacture and sales, and last spring was named to supervise the service for architects, consulting engineers, and home builders conducted by G-E at Cleveland, continuing his other duties in connection with appliances.

Builds Model Kitchen and Then Starts Selling Them

OAKLAND, Calif.—The installation of a model General Electric kitchen in his showroom was Daniel V. Webster's announcement of his expansion from refrigerator sales to the marketing of complete General Electric kitchens as new dealer for Electric Appliances, Inc.

Unusual in design, and affecting a unique wedge-shaped display plan, the kitchen has attracted many visitors and assisted in the sale of two kitchens and several individual appliances.

Mr. Webster was formerly a refrigerator dealer in Ojai, Calif.

Wilt Forms K Club To Promote G-E Sales

DALLAS—Members of a new club called the K Club, organized by W. I. Wilt, sales promotion manager for Electric Household Appliances, Inc. here, study kitchen planning with the purpose of selling more G-E products.

Sketches of their own kitchens to be revised and modernized to make scientific arrangement for work centers and appliances assist the men in their Tuesday evening studies.

At each meeting Mr. Wilt passes out Dodge reports on all new residential construction. Of the 22 reports issued at the first meeting, one refrigerator sale, four refrigerator prospects, five range prospects, two dishwasher prospects, and one prospect each for a washer and ironer were the results.

Members of the K Club include: E. S. Richardson, Dallas retail manager, L. L. Robinson, Tom Sawyer, L. B. Gilbert, U. W. Prater, A. E. Carey, C. L. Lawler, A. E. Barker, L. G. Reed, J. G. Curtis, W. W. Peevey, W. J. Dubois, W. L. Hay, and W. D. Lamar.

Fordney Speaks on Air Conditions 11 Miles Up

CHICAGO — "Air conditions 11.6 miles up" was expected to be the subject on which Major Chester L. Fordney, famous for his stratosphere flight, would speak at the January meeting of the Chicago section, American Society of Refrigerating Engineers, scheduled for Tuesday, Jan. 21, at the Hamilton Club.

R. L. Turner, research engineer with the Liquid Carbonic Co., was to talk on "Dry Ice and Applications." Mr. Turner was to illustrate with slides his talk on solid SO_2 and its various applications to refrigeration.

Delco
MOTORS

There are many good reasons for Delco's leadership in the building of fractional horsepower motors for household appliance use. Foremost, of course, is the quality of Delco motors themselves. Their quietness of operation, their dependability and their unusually long life make them the logical choice for appliance manufacturers. Equally important—since it is a direct result of Delco quality—is the *good name* that Delco has among household appliance *users*, and the influence that this reputation exerts upon the buyer when he selects his refrigerator, washing machine, ironer or air conditioner.

Made in Canada by McKinnon Industries, Ltd., St. Catharines, Ont.

DELCO PRODUCTS CORPORATION • DAYTON, OHIO

Frigidaire Explains Sales Plans, Shows Products to Distributors

(*Concluded from Page 1, Column 4*)

both the "Master" and "Super" series, feature new streamline styling and low-cost operating standards, and include radical changes in mechanical designs. Several convenience features have also been added.

Sales plans pack plenty of punch, and indications are that the company intends to climb to new heights in its merchandising and advertising program, in an effort "to lift Mr. and Mrs. America 'out of the fog' in which they are now engulfed," and give them a set of "new standards of refrigerator value."

Selling Based on Facts

Selling this year will be based on facts, not claims, company officials declare. For every selling point Frigidaire dealers and salesmen make, the company will back them up with definite, conclusive proof. Frigidaire officials expect this proof-selling policy to have a profound effect on the industry's mercnandising practice in the future.

How well both the product and the plan back of it is turned to distributor taste is indicated by the fact that several times during the program, distributors stopped the proceedings with outbursts of cheering which, old-timers said, surpassed anything they had ever seen in a Frigidaire convention.

The presentation program is more spectacular than anything the company has ever attempted, and the pre-view showing was expertly staged by a cross section of the three road crews' staffs, who ran through their lines with the ease and assurance of professional troopers.

Biechler Opens Convention

Tuesday's meeting was opened with an address of welcome by E. G. Biechler, president and general manager, who reminded conventioneers that it had been several years since Frigidaire had invited all its key men in for a special pre-view meeting. The company's 1936 merchandising program, however, was of enough importance to justify the action, he added.

Frank R. Pierce, manager of Frigidaire's household division, got the convention into high gear in a hurry. "We told you last fall that 'you'll do better with Frigidaire in 1936.' Later we said, 'We've got the range for '36.' We believe that what you see here today will prove to you that we were 100 per cent right on both counts."

'Out of the Fog'

"Out of the Fog," a three-scene skit, paved the way for a movie showing Frigidaire precision production methods, after which the new models were flashed into view, explained by C. J. Allen of the Frigidaire road show crew.

The company's 1936 selling program was explained by D. T. Hayward, and the morning session ended with a summary by Mr. Pierce.

Skits were a prominent part of the afternoon meeting. Members of Frigidaire's B. T. U. Club will have a big place on the regular field convention programs, the sample given Tuesday indicated.

Interesting features of the afternoon program also included a sound film on "The Inside Story of Air Conditioning," which will be available to distributors and dealers for showing before luncheon and civic clubs, and other similar organizations. The film tells the story of both summer and winter conditioning in non-technical language, and is in line with Frigidaire's educational program in the air-conditioning field.

The commercial refrigeration presentation was made by R. W. Pocock, and featured a comedy "Major Blowes' Amateur Salesman's Hour" to show the right and wrong of preparation and presentation methods.

Effect of Modern Ideas

Next came "Puddle Fishin'," Frigidaire's dealer skit which, in four scenes, tells an effective story of what modern merchandising and sales methods will do for a "behind the times" dealer in a moderate-sized city. The playlet takes place in the showrooms of "Duncan & Son."

"Father" Duncan is of the old school of dealers—a man who believes that his store's reputation for quality merchandise will bring the public in to buy his goods, be they refrigerators or something else. "Son" Duncan, however, is of the modern, specialty-selling school, who believes in taking his story to his customers.

Advertising Program

Duncan & Son are at wide variance on merchandising policy, and seem likely to remain so, until the father's absence on a two-week's fishing trip gives the son a chance to put his selling plans into effect. When the father returns, business is so good that he decides to quit "puddle fishin'" for refrigerator sales, and go after them just as he went after the fish—with every modern device he could find.

W. F. Switzer explained "Salesmanship in Print," the 1936 advertising and sales promotion program. Advertising this year will be designed for greater and more complete coverage than ever before, and will include a wide range of magazine, Sunday magazine, and newspaper mediums, both national and local in scope.

F. C. Lyons outlined the series of dealer helps which Frigidaire will furnish to help its field forces do a better all-around selling job this year. Briefly, these include a new sales manual, sales schools and training bulletins, a special-preview for best prospects, a pre-announcement teaser campaign, a special announcement campaign for local newspapers, and "proof selling" materials for dealers.

G-M Executives at Banquet

Tuesday night the 800 Frigidairemen and their guests attended a colorful banquet in the ballroom of Hotel Biltmore, at which high Frigidaire and General Motors executives were speakers. These included President E. G. Biechler, who presided as toastmaster; Richard H. Grant, General Motors vice president; and Charles F. Kettering, vice president and head of G-M's research activities.

Answering the criticism of those who were blaming the machine age for the depression, Mr. Kettering declared that technological invention was too far behind, rather than too far advanced, and that unemployment exists because we have not developed enough new things to do.

While he said that we can never enumerate the new things we ought to have, since they generally do not appear until something else suddenly shows them up, Mr. Kettering does not subscribe to the title of a recent book, called "This Mysterious Universe." Rather, he said, it should be labeled "A Mysterious Mind's Conception of the Universe." The title given the book represents a way we have of appeasing our ego, he said.

Kettering Defines Science

A good definition of science, Mr. Kettering said, would be "something very slightly understood," adding that there are just as great possibilities for the world ahead as have existed in the past, and that generally that about which one thinks the least turns out to be the most worthwhile. To illustrate, he cited the Wright brothers, pioneers in aviation.

Control of temperature, he said, is a comparatively new development—especially the lowering of temperatures—and much advancement may naturally be expected in the future.

Progress of Diesel Engine

He touched slightly on the progress of the Diesel engine, which, three years ago, "was not even a line on paper," declaring it to be a business which, in the beginning, General Motors had never intended to enter.

"Do a thing because it looks like the right thing to do; plan and perpetuate it and it will be a success. We can do better things only as we have faith in doing a job the best way we can today, with the best knowledge we have at hand.

"Don't make a day-after-tomorrow decision today, because things sometimes change by that time," Mr. Kettering concluded.

Grant Talks on Sales

Mr. Grant gave a bright picture of prospective business conditions for 1936, especially in the automobile line. Taking all factors into consideration, he said, this business will be 10 to 15 per cent better than 1935, which in its turn showed a 38 per cent increase over 1934.

The mechanical refrigeration industry, Mr. Grant said, should show an increase even greater than the automobile business, because it is younger and has more room to grow and develop.

With national income going up, with product improvement, and better times, business this year is bound to be better, he said. He recommended a vigorous program of specialty selling for distributors through their dealer outlets, with the emphasis on quality rather than price.

Sales work in the refrigeration field was begun by specialty distributors, Mr. Grant reminded his hearers. Utilities, department stores, and smaller merchants came into the selling picture later, he added.

He pictured the beginnings of Frigidaire when it was brought to Dayton in 1920; how it was merged with Delco-Light selling until it grew into a huge separate business of its own.

S. A. Long, president of Long Electric Co., Wichita, Kan., a pioneer Frigidaire distributor, spoke in behalf of the distributors and others called to Dayton for the convention. R. G. Hutchinson, San Francisco, regional manager for the Pacific Coast, extended greetings from the west coast.

Three Crews Leave for Field

Three traveling troupes of headquarters men left Dayton Jan. 18 to begin the unveiling of Frigidaire's 1936 products, sales, and advertising plans in more than 40 cities.

The members of the sales department making up the three convention crews, each of which will travel with a baggage car load of paraphernalia, have been in rehearsal since the day after Christmas.

Sent on their way by Carl A. Copp, general sales manager, the three crews headed for Tampa, New Orleans, and Memphis, respectively.

Frank R. Pierce, manager of the household division, heads the crew making the eastern swing. His colleagues are: Ellsworth Gilbert, zone manager, household division; F. W. Beecher, air-conditioning division; R. W. Pocock, air-conditioning division; C. J. Allen, zone manager, household division; S. V. White, sales promotion division; A. D. Farrell, manager, display division; P. F. Bunger, display division; Ivan Rowen, display division; J. F. Pedder, sales promotion division.

This group will hold sales conventions in Atlanta, Tampa, Chattanooga, Tenn., Roanoke, Va., Richmond, Va., Philadelphia, Baltimore, Boston, Pittsburgh, Rochester, N. Y., Cleveland, and two straight in New York City.

Walker Heads Second Group

H. J. Walker, Jr., manager of the public utilities division, is leader of the middle western crew. His associates are: D. T. Hayward, zone manager, household division; C. E. Quigley, assistant manager, commercial division; W. F. Switzer, marketing division; J. A. Smith, commercial division; R. H. Huston, zone manager, household division; H. D. Gibson, zone manager, household division; Insco Williams, display division; R. E. Treon, sales division.

This group will hold two conventions in Chicago, and one in each of the following cities: Memphis, Tulsa, Okla., Wichita, Kan., Kansas City, St. Louis, Indianapolis, Cincinnati, Detroit, Minneapolis, Omaha, Des Moines, and Sioux City, Iowa.

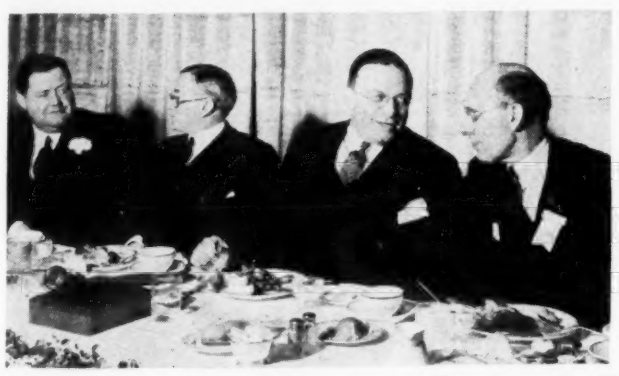
Clark Leads Third Crew

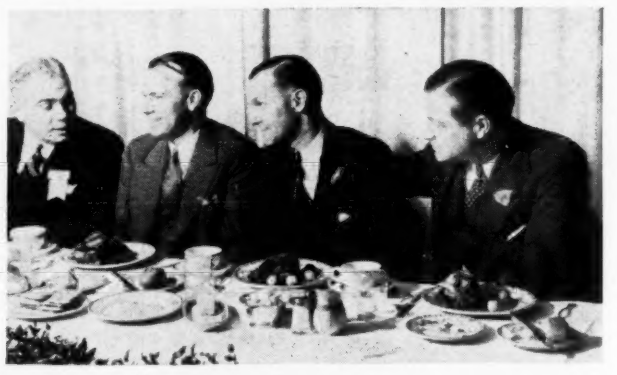
Lee A. Clark, household advertising and sales promotion manager, skippers the troupe headed for the west coast. His companions are: Frank C. Lyons, assistant director of public relations; H. M. Kelly, public utilities division; J. W. Thiele, zone manager, household division; A. C. Freiman, commercial division; R. L. Winegarner, zone manager, household division; G. E. Durban, assistant manager, public utilities division; Jack Davy, sales division; C. R. Hageman, display division.

This outfit will hold conventions in New Orleans, Houston, Tex., San Antonio, Tex., Ft. Worth, Tex., Los Angeles, San Francisco, Portland, Ore., Seattle, Spokane, Salt Lake City, and Denver.

Accompanying the convention units in their respective areas will be R. G. Hutchison, manager in charge of Pacific Coast activities; T. A. Farrell, assistant household sales manager in charge of eastern states; and H. T. Mattern, assistant household sales manager in charge of western states.

They Know What Frigidaire Has for 1936





Left: Lee A. Clark, household advertising and sales promotion manager, and David M. Noyes, of Lord & Thomas advertising agency. Above left: W. F. Armstrong, assistant general manager; R. H. Grant, General Motors vice president; President E. G. Biechler and C. F. Kettering, G-M research head. Right: Ray Fox, GMAC; C. T. Lawson, household sales manager; Virgil Hetzel, service manager, and H. J. Walker, Jr., public utilities division manager. Lower right: Ernest R. Breech, North American Aviation Corp., C. A. Copp, general sales manager.

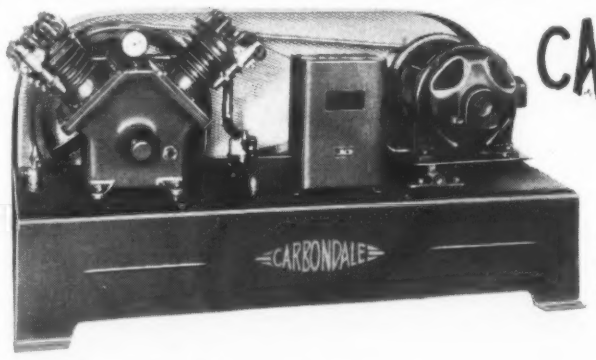
Smithers Joins Reinhard, Norge Distributors

MINNEAPOLIS—H. B. Smithers, who has been general sales manager of the W. M. Dutton & Sons Co., Hastings, Neb., for the past three years, recently resigned his position with this company to become affiliated with Reinhard Bros., Co., local Norge distributor in Minneapolis.

THE ANSUL Twins

EVERY CYLINDER ANALYZED

ANSUL CHEMICAL COMPANY
MARINETTE » » » » » WISCONSIN



CARBONDALE

This shows arrangement of 3 hp., 5 hp., 7½ hp., 10 hp. and 15 hp. sizes.

A Sturdy Quiet-operating Freon-Methyl Unit . . .

- Built in sizes ¼ hp. to 25 hp.
- Thoroughly tried and tested
- Rated according to uniform rating method

Ask for specifications

Several good distributor territories open

CARBONDALE MACHINE CORPORATION
UNIT OF WORTHINGTON PUMP AND MACHINERY CORPORATION
General Offices: HARRISON, NEW JERSEY
Branch Offices and Representatives throughout the World

AR-3622

Air-Conditioning Engineering and Service Studied at Westinghouse School

(*Concluded from Page 1, Column 4*)
taken up with talks by Westinghouse executives, and with discussions and demonstrations by representatives of various manufacturing companies that the company deals with in its air-conditioning work. Remaining days will be devoted to the working of technical problems and examples of specific installations.

Subjects which the school will cover include:

Air conditioning for comfort: a discussion of the essential requirements of comfort air conditioning, and the various factors to be taken into account in designing air-conditioning systems.

Westinghouse air-conditioning systems: this will cover the fundamental differences between the various types of systems, such as central plant systems, ceiling or suspended unit systems, floor-type systems, duct systems, etc. Data needed to make selections of the most effective system for the specific job will also be given.

Westinghouse psychrograph: this is designed to show the value of this instrument in estimating and application work, and the time-saving and convenience advantages which knowledge of its use makes possible.

Cooling and heating load determination: this will cover selection and calculation of the various factors affecting the heating and cooling loads to be carried.

Typical problems to determine loads: the school will be given several specific problems to be worked out, ranging from the making of a survey to the determining of the load to be carried, and the equipment to do the work.

Ventilation and filtration: covered under this classification will be determination of the necessary amount of ventilation, mixtures of fresh and recirculated air, and the application of the necessary equipment. Discussion of the various methods of filtering with precautions to be observed, will also come under this heading.

Use of performance data: this includes selection of equipment according to the load to be carried, and the operating conditions on the job. Specific problems will be given, to be worked out by the school and checked by instructors. A new system of tabulating evaporator performance has been worked out, and will be described at the sessions.

Duct design and layouts: this covers problems in duct design and layout, including discussion of materials, sizes, locations, etc.

Selection and application of fans and fan drives: this topic will be covered by a representative of a fan manufacturer, with a demonstration of various types, and a discussion of applications.

Air distribution: selection and application of grilles and outlets: a manufacturers' representative will also cover this topic, demonstrating the effectiveness of various types of grilles and outlets, their proper selection and installation.

Controls and their application: an extended discussion of the various types of controls, including condensing unit and air-conditioning unit controls, and their application, will be made under this heading. Three manufacturers are sending representatives to cover the subject.

Cooling towers: where to use them, and where not. This will include selection of type, and a discussion of capacities, application, etc.

Freon demonstration by the manufacturer.

Materials and methods for piping: covering the various types of piping to be selected, with necessary precautions to be taken regarding location, installation, joints, and the like. A demonstration of the art of making sweated joints will also be included.

New Westinghouse equipment, including the new Mobilaire, condensing units, evaporator units, and large blower units, will be shown at the school, and their operating characteristics and advantages will be fully discussed.

A demonstration will also be given of the various air-conditioning service problems, together with their solution. Use of tools and equipment, methods and practices in both installation and service will be covered under this topic.

Leonard Offers Dealers New Finance Plan For Purchase of Floor Models

(*Concluded from Page 1, Column 5*)
tributors, and told how the features had been selected after consideration of a survey made among Leonard dealers, competitive dealers, wholesalemen, and consumers.

In discussing Freon, which will be used in Leonard models for the first time this year, Mr. Petrie urged distributors to inform their dealers not to use the safety features of this refrigerant as a selling tool, but only to meet competitive claims on refrigerants.

Available for use by distributors this year is a "Retail Inventory Purchase Plan" designed to enable dealers with limited capital to put a sufficient number of models on their floors at the start of the season, C. M. Armstrong, vice president of ReDisco, Leonard finance organization, told the distributors.

This special "floor plan" with a deferred payment feature will be in effect only during the spring and summer months, Mr. Armstrong stated.

On the financing of consumer purchases of electric refrigerators, ReDisco is offering a new attraction in the form of a 90-day "leeway" period. With this new type of contract, the purchaser may buy a refrigerator and intend to pay for it on a deferred payment basis, but if he pays in full within 90 days there is no finance charge.

The 90-day "leeway" extends to all contracts, so that if a purchaser extends his payments over 24 months, he pays finance charges for 21 months only.

Sam Mitchell, director of all Leonard advertising and sales promotion, was in charge of the Wednesday afternoon program at which Leonard's advertising plans for the year were disclosed.

Mr. Mitchell introduced B. B. Geyer and H. W. Newell of Geyer, Cornell & Newell, new Leonard agency. These men outlined the magazine, newspaper, and billboard campaigns for the year, and explained the basis on which the various media had been selected.

The double-page spreads which Leonard will have in the *Saturday Evening Post* will all be in color, Mr. Geyer declared.

Paul Sowell, Leonard advertising manager, told the distributors the many ways in which dealers are to be told of the new Leonard lines, and the plans that have been made for presentation of the Leonard lines and program to dealers at pre-showings.

The extended sales education program, the various types of literature that have been prepared, and the way the factory will assist in the "Spring Festival" (opening showing to the public) were other subjects discussed by Mr. Sowell.

Sorenson Made District Manager of Westinghouse

BALTIMORE—S. W. Sorenson has been named manager of household refrigeration sales, middle Atlantic district, for the Westinghouse Electric & Mfg. Co. He succeeds S. M. Davison, who has been promoted to the position of merchandise manager of the southeastern district.

Anchor Lite Distributes Whiting Stokers

PITTSBURGH—The Anchor Lite Appliance Co., Crosley distributor here, has added the Whiting Stoker to its line of household appliances.

FILTRINE
WATER COOLERS
STORAGE ● SHELL & TUBE
BROOKLYN, N. Y.

150 Air-Conditioning Salesmen Qualify for For G-E Cruise

NEW YORK CITY—Salesmen winning places on the prize cruise to Nassau and Havana sponsored by the air-conditioning department of General Electric Co. increased from 60 last year to more than 150 this year, in spite of higher sales quotas.

Assembled at the Hotel Lexington here recently before leaving on their cruise, the winners heard John L. Rice, commissioner of health, speak on air-conditioning potentialities for the betterment of public health.

Hosts at the dinner were the New York and Brooklyn dealers, C. M. Schwerin, president of Schwerin Air Conditioning Corp., and T. A. Kenny, president of Gene Meenan, Inc. Included among those leaving on the *Queen Bermuda* were: J. J. Donovan, manager of the G-E air-conditioning department, Bloomfield, N. J.; E. B. Shiddel, assistant to the manager; A. C. Roy, advertising and sales promotion manager; and W. A. Scherff, manager of oil furnace sales.

Sales Idea of the Week
By V. E. (Sam) Vining

Here is a practical suggestion.

After each sale call on the husband at his place of business within 24 hours after the installation has been made.

Analyze.

Husband's interest is at its peak. He has just made a major purchase and he is proud of the fact that he makes enough money to afford a purchase of this kind—and he loves to tell the world that he is the type of man who provides all modern conveniences for his home.

Don't laugh at that description of the average man. It is a picture of you and a picture of me,

And a pouter pigeon.

We're all alike.

Satisfy the man's little vanity. He has earned it. He is entitled to it if for no other reason than the commission you earned on the deal.

And,

During the past 24 hours he has talked a lot and boasted a bit with his business associates about the new refrigerator he has purchased. He is a walking card index system of the refrigerator prospects in his office and he would love not only to tell you who the prospects are, but he will take great pride in introducing them to you.

If you aren't careful and are experienced enough to keep your mouth shut, he will even do most of the selling, leaving nothing for you but to figure the size of the cabinet and supply the ink in your fountain pen.

An ounce of head work equals a mile of foot work.

New Hawaiin Dealer

HONOLULU, Ha.—Bergstrom Music Co. has been named by W. A. Ramsey, Ltd., Hawaiian G-E distributor, as the newest refrigerator dealer.

FREE CATALOG
REFRIGERATION
WHOLESALE RADIO SERVICE CO.
FEATURING REFRIGERATION
Thousands of replacement parts for practically every standard make of Refrigerator at lowest WHOLESALE Prices—as well as a line of Refrigerators incorporating the latest features and priced so that Servicemen can make a profit!
Gaskets, tubing, thermostats, evaporators, tools, and hundreds of other items are listed. No matter what you want in the Refrigeration Field we can supply it when you need it and at a price that will enable you to make a legitimate profit.
Get your Free Copy of this new Specialized Refrigeration Catalog.
Address Dept. ERN-16.
WHOLESALE RADIO SERVICE CO.
NEW YORK, N.Y. 100 SIXTH AVE.
CHICAGO, ILL. 901 W. JACKSON BLVD.
ATLANTA, GA. 430 W. PEACHTREE ST. N.W.
BRONX, N.Y. 542 E. FORDHAM RD.
NEWARK, N.J. 219 CENTRAL AVE.

BONDERIZING
helps to Sell the
CRITICAL CUSTOMER

● Along with roomy interior, efficient mechanical equipment and other important details, rust-prevention under the beautiful cabinet finish is a clinching sales argument.

The careful buyer knows the extra value provided by Bonderizing. Its paint holding, rust-preventing qualities mean greater finish permanence and assurance of continued fine appearance.

Every buyer will be glad to know of this extra feature and she will take greater pride and satisfaction in her purchase. This is a plus value that helps to hold the good will of your trade.

PARKER RUST-PROOF COMPANY
2197 E. Milwaukee Ave. Detroit, Mich.

For more than 21 years this company has devoted its entire time, talent and energy to the improvement of rust-proofing methods. A new book describing Bonderizing is available to manufacturers and technical men. Send for your copy.

PARKER
RUST-PROOFING
processes
PARKERIZING • BONDERIZING

The Refrigeration Engineer's Manual

By S. L. Potts

Functions and Classification of Refrigerator Compressors

Chapter 3—Compressors

In a refrigerating system of the compression type, the compressor is a very important unit in the system. It forms the dividing line between the low pressure and the high pressure side of the system. It removes the refrigerating gases from the evaporating coils at low pressure and low boiling temperatures, and by performing mechanical work on these gases discharges them at high pressure and high condensing temperature.

This is a very important function that must be performed on the refrigerating gases in order to condense them to liquids at temperatures in keeping with the condensing materials (water or air) that are available for this operation, and thus make the cycle of operation continuous.

Changes of State of Water, Ammonia

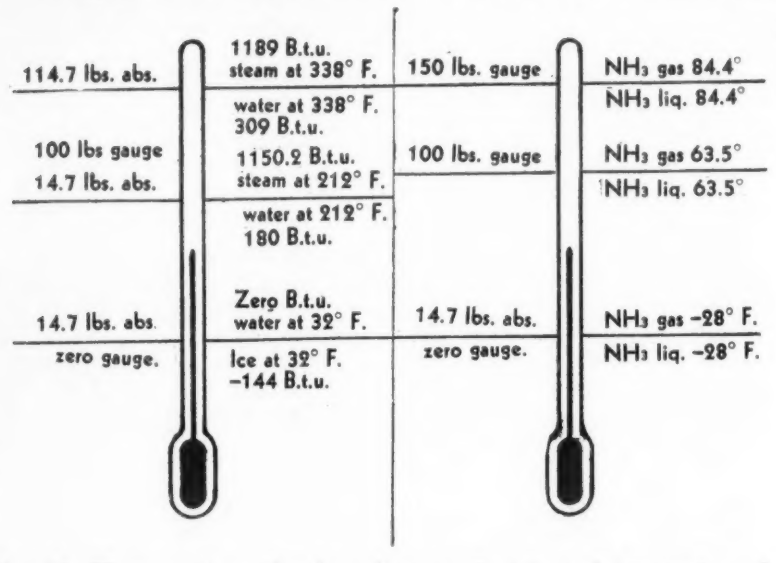


Fig. 12—Thermometers showing changes of state and temperature for water (left), and ammonia (right).

In the matter of evaporating and condensing, the refrigerating gases act exactly in the same manner as water and steam. As the pressure on the water is increased, the boiling point of the water is raised. As the pressure on the steam is raised, the condensing temperature is raised.

This is exactly what happens with the refrigerating gases. They are removed from the evaporating coils where they have been evaporated at low temperatures by absorbing latent heat to change their form at low temperatures. The gases thus formed contain the most heat in B.t.u. per pound. They contain both sensible and latent heat.

In order to furnish the heat required for evaporation of refrigerant, it must be removed from the contents of the refrigerated space. The removal of the heat from the contents cools the contents in this space, but it is the means of producing a change in form (liquid to gas) in the refrigerant. The gas thus formed contains more heat than the liquid because the gas has both the sensible and the latent heat.

The gases thus produced are drawn off by the compressor, raised to such a pressure and such a condensing temperature that the heat will flow out of the refrigerating gases into the condensing medium (water or air). This flow of heat from the refrigerant to the cooling medium at the condensing temperature of refrigerant, will produce condensation of the refrigerant, changing its form from a gas to a liquid at high pressure and high temperature.

The liquid under high pressure and high temperature, contains much less heat in B.t.u than the gas. The only heat contained by the liquid is the sensible heat.

This might be stated thus: that the refrigerant while in the liquid form at high pressure and high temperature contains less heat in B.t.u. per pound than the gases formed in the evaporating coils at low pressure and low temperature.

The high temperature liquid refrigerant contains less heat in B.t.u. per pound than the low temperature gaseous refrigerant. The liquid has only the sensible heat, while the gases have both sensible and latent heat.

Function of the Compressor

The function of the compressor in a compression system of refrigeration is:

First. To remove the gases formed in the evaporating coils by the evaporation of the liquid refrigerant, as fast as they are formed and thus prevent a building up of the pressure with its increase in evaporating temperature inside of the evaporating coils.

Second. To compress these gases to such a pressure (known as the head pressure) and to such a condensing temperature that the temperature of the refrigerating gases will be above the temperature of the cooling medium (water or air) used in the condenser. When this condition exists, the heat in the refrigerating gases will flow into the cooling water or air and condensation will result.

The following illustration might help to make this clear.

Let us refer back to the steam tables. Water at atmospheric pressure (14.7 lbs. absolute) will boil at 212° F. and if the latent heat is added (970.2 B.t.u. per pound) the water will change into steam (ebullition or boiling). If the latent heat (970.2 B.t.u.) is taken away from the steam (gas), it will return to the liquid form (condense) and the temperature of the condensate will be 212° F.

If we raise the pressure of the liquid to 100 lbs. gauge pressure, we find that it does not boil until it reaches a temperature of 338° F. and we cannot add any latent heat at 212° F. as before. If we now add the latent heat (881 B.t.u. per pound) we change the liquid at 338° F. into a gas at 338° F., or by raising the pressure we have raised the boiling point of the liquid. If the latent heat is removed, the gas will condense at 338° F.

Using the same explanation as this, using ammonia as the liquid instead of water. Ammonia liquid at atmospheric pressure (14.7 lbs. absolute) will boil at —28° F. If the latent heat (589.3 B.t.u. per lb.) is added from any source at this low temperature, the ammonia liquid will change into a gas at —28° F.

If it were possible to remove this latent heat at —28° F., the gas would change back to a liquid (condense). It can be seen that it is difficult to find anything with a lower temperature than this, so it would be very impractical to condense ammonia at atmospheric pressure.

If we raise the pressure of the ammonia liquid to 101 lbs. gauge pressure, the boiling point has been raised to 64° F. If we now add the latent heat (514.3 B.t.u. per lb.) at this temperature boiling will take place and the liquid will change form from a liquid to a gas at 64° F.

If the latent heat is removed, condensation will result. It can be seen that it is much easier to find a cooling medium that would absorb the latent heat at 64° F. when it would be totally impractical to absorb it at —28° F.

Head pressure will vary automatically with the temperature of the cooling medium (water or air) and the efficiency of the heat transfer in the condenser. This is not in the control of the engineer only in so far as he can change the temperature of the condensing medium. The compressor automatically produces the head pressure required for the conditions met in the plant.

To illustrate this: Let us assume that the condensing water is 50° F. Any gas whose temperature is 50° F. or less will not be cooled in any way by this water. The function of the compressor is to raise the pressure and the condensing point until the cooling medium will absorb the heat from the gas. No cooling of the compressed refrigerating gases takes place until the gas temperature is increased above 50° F.

At 51° F. temperature of the refrigerating gases, a slight cooling or heat transfer takes place from the gas to the water. At 55° F. temperature of the refrigerating gases, the rate of heat transfer has increased and the cooling and condensing might be equal to the rate of discharge of gases from the compressor.

If the rate of heat transfer (condensing) is not equal to the discharge of the compressor, the gas pressure will continue to build up and the temperature increase accordingly. At 60° F., temperature of the refrigerating gases, the rate of heat transfer has again increased and the cooling and condensing might now be equal to the rate of discharge of gases from the compressor. The head pressure then will be 92.9 lbs. per sq. in. gauge.

If for any reason the temperature of the condensing water is increased from 50° to 70° F. At 60° F. temperature of the refrigerating gases as in the last case, when the condensing was equal to the discharge rate from compressor, now no cooling will take place because the gases are colder than the water.

The compressor will now automatically build up the pressure on the gases until the temperature of the gases reach 80° F. or perhaps 85° F. before the rate of condensation of gases is equal to the discharge of gas from the compressor.

The pressure produced by the compressor will automatically increase or decrease with any increase or decrease of the temperature of the cooling medium until the rate of condensation in condenser is equal to the rate of discharge of gas from the compressor. When this balance is reached, the head pressure will remain

(*Concluded on Page 13, Column 1*)

Do You Belong in One of These Five Groups?

THE REFRIGERATION ENGINEERS MANUAL, a guide for the licensed operator of industrial refrigeration systems, is presented to readers of the NEWS as a course of study which will be of great value:

(1) To practical refrigerating engineers whose experience in ice making and cold storage plants has been entirely with ammonia systems,

(2) To installation and service men whose training has been limited to household and small commercial applications,

(3) To college trained engineers who understand the principles of refrigeration but who have had no direct contact with operating problems,

(4) To factory production men who are familiar with manufacturing processes but who have had no opportunity to learn the fundamental principles of refrigeration,

(5) To dealers and salesmen who have been successfully selling household units as package merchandise, and who see the need for a better understanding of the equipment in order to take advantage of the opportunities afforded by the development of *air conditioning.*

Synopsis of Preceding Instalments

Chapter I, starting in the Jan. 1, 1936, issue and continued in the Jan. 8 issue, explains the physical laws involved in the process of producing artificial refrigeration and the principal types of systems used. This introductory chapter also defines the terms and units of measurements used frequently in later discussions.

Chapter II, in the Jan. 15 issue gives a comprehensive survey of the characteristics of all the various chemicals which may be used as refrigerants, with the advantages and disadvantages of those most commonly selected in commercial practice.

Chapter III, the first instalment of which appears in this issue (Jan. 22), deals with compressors and their functions, with a classification of the types and the advantages and disadvantages of each variety.

THE REFRIGERATION ENGINEERS MANUAL will be offered in book form about May 1, 1936. Approximately 300 pages. Price $3.00 per copy. The MANUAL in combination with a subscription to the NEWS costs $5.00 if check is sent with order.

Enclosed Belt-Driven Compressor

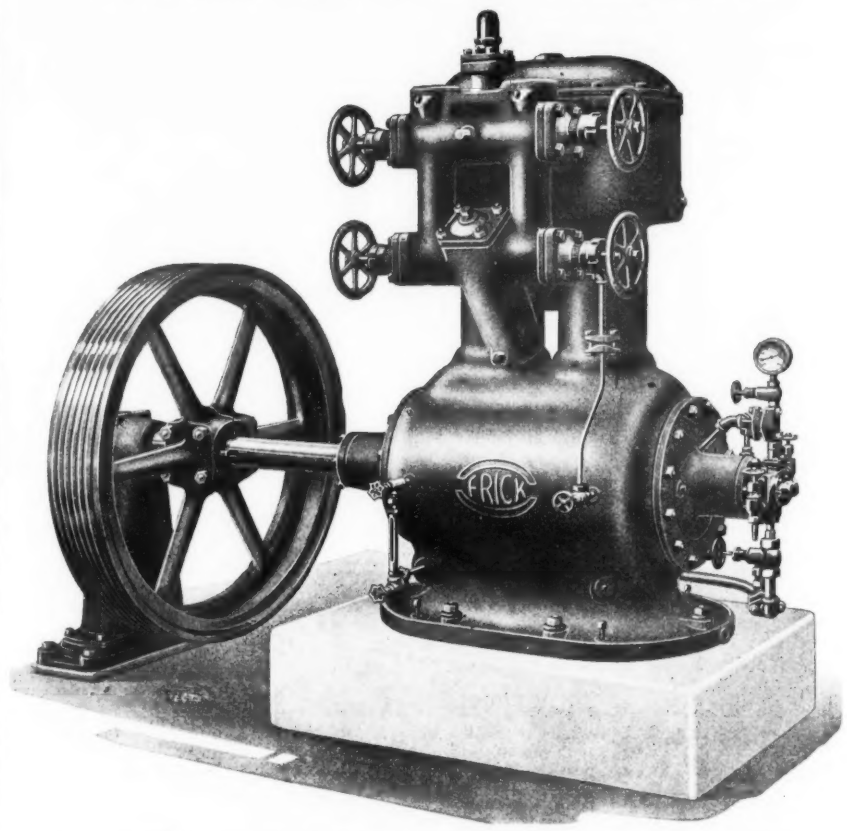


Fig. 14—Small vertical, twin-cylinder compressor, belt driven, enclosed type built by Frick Co.

700-Ton Direct-Driven Compressor

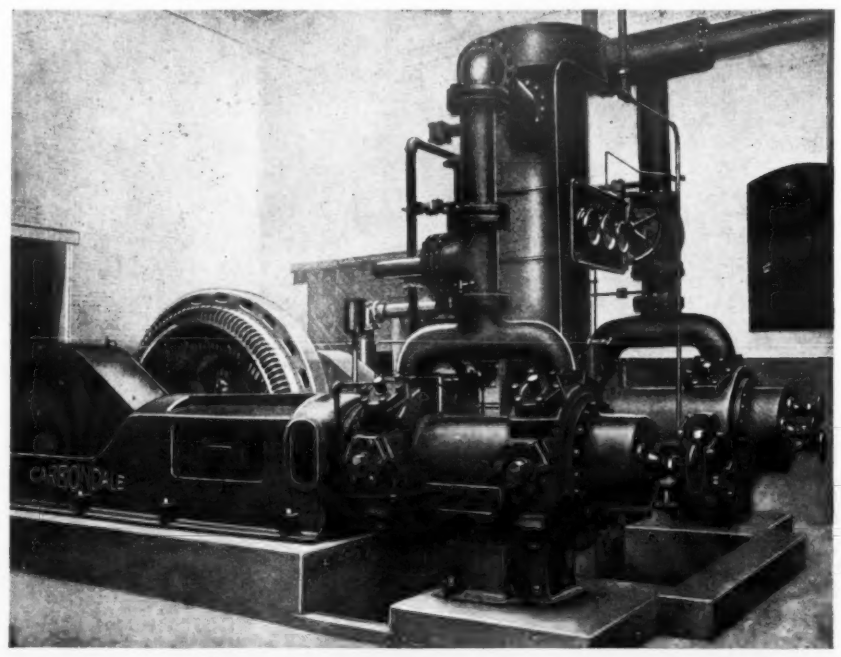


Fig. 13—Seven hundred ton, horizontal, two-stage, double-acting compressor, direct-connected to synchronous motor made by Carbondale Machine Co.

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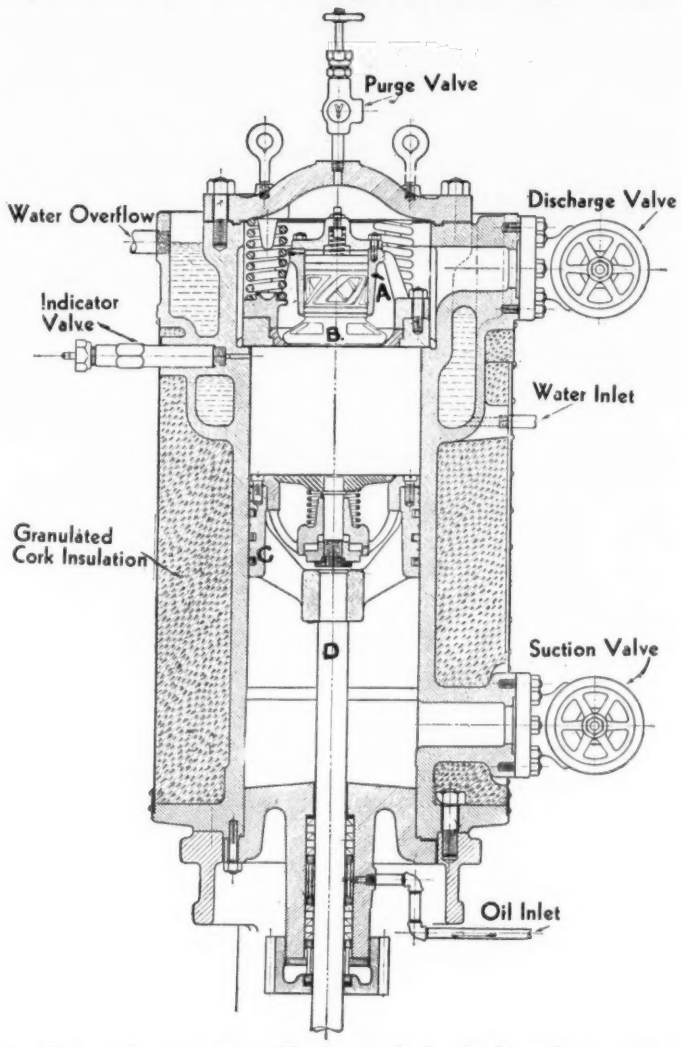

Fig. 15—View of open-type York vertical single-acting compressor.

How Compressors Are Classified

(*Concluded from Page 12, Column 5*)
constant at the pressure then existing on the high side of the system.

In order to make this clear, let us assume an ammonia compressor operating on a refrigerating plant and give the exact figures for the above case taken from the ammonia tables.

At 50° F., the head pressure required is 74.5 lbs. per sq. in. No condensation takes place. The gas and water are the same temperature.

At 51° F., the head pressure is raised to 76.2 lbs. per sq. in. Only a slight condensation takes place because the temperature difference is small and the heat transfer is small.

At 55° F., the head pressure is raised to 83.4 lbs. The rate of condensation has increased somewhat and may be enough.

At 60° F., the head pressure is up to 92.9 lbs. and the rate of condensation is now assumed to be equal to the rate of discharge of gas from the compressor. The head pressure will remain at 92.9 lbs. as long as these conditions remain unchanged.

Assuming that the cooling water temperature is raised to 70° F. instead of 50° F.

At 60° F. temperature of the gases, no condensation takes place.

At 70° F. no condensation takes place.

At 71° F. and a head pressure of 116.4 lbs., a slight condensation takes place, but only because the temperature difference is small

At 75° F. and a head pressure of 125.8 lbs., the rate of condensation has increased somewhat but not enough to equal the discharge.

At 80° F. and head pressure of 138.3 lbs., the rate of condensation might be equal to the discharge of gases from the compressor. If it does not, the pressure will increase to say 151.7 lbs. and 85° F. condensing temperature. At this this point, the rate of condensation of gas is equal to the discharge of gas from the compressor and a balance is established. 151.7 lbs. then is the head pressure for these assumed conditions.

Compressor Classification

Position of Cylinder

Compressors are classified according to the position of the cylinders.

First. Horizontal.
Second. Vertical.

Horizontal compressors are those that have the center line of the cylinder in a horizontal position.

Vertical compressors are those that have the center line of cylinder in a vertical postion.

Compressors of large capacity are most frequently made horizontal and double acting of the open type.

Compressors of medium or small capacity are often made vertical and single acting of the enclosed type.

Gas Discharge

Compressors are classified according to methods of gas discharge.

First. Single acting.
Second. Double acting.

Single acting compressors are those in which compression of the gas takes place in one end of the cylinder only. These compressors have one suction and one discharge stroke in one revolution.

Double acting compressors are those in which the compression of gas takes place in both ends of the cylinder. There is one suction and one discharge stroke for each stroke of the compressor, or two discharges of gas for each revolution of the compressor.

Construction

Vertical single-acting compressors may be of the

First. Open type.
Second. Enclosed type.
Third. Single cylinder.
Fourth. Multiple cylinders.

The enclosed type is divided into those that use the crank case for the suction, and those that use trunk pistons and do not have any suction through the crank case.

Vertical single acting compressors may be open or enclosed design and may consist of one, two, or three cylinders, all working from the one crank shaft.

A twin (2) cylinder vertical single-acting compressor has the same number of gas discharges per revolution as a single cylinder double acting compressor.

The vertical enclosed type compressor has crank and connecting rod enclosed in crank case which is usually partly filled with lubricating oil and uses the splash system for lubricating bearings and connecting rods.

The open type compressor uses a stuffing box on piston rod and provides other systems of lubrication for main bearing and connecting rod.

Type of Drive

First. Direct connected.
Second. Belt driven.

Type of Driving Machine

First. Steam engine direct connected or belted.
Second. Electric motor direct connected or belted.
Third. Gas engine or Diesel engine.

Any kind of power can be used to drive a compressor. The lower the power cost, the more desirable that type drive becomes.

In Fig. 13 is shown a large size (700 ton) horizontal two stage double acting compressor, direct connected to a synchronous motor operating at 150 revolutions per minute. Manufactured by the Worthington Pump and Machinery Co.

In Fig. 14 is shown a small vertical twin cylinder belt driven enclosed type compressor with trunk pistons manufactured by the Frick Co.

In Fig. 15 is shown a sectional view of a cylinder of a vertical single acting compressor of the open type of construction. A is the discharge valve guide. B is the discharge valve. C is the piston frame or yoke that carries the suction valve. D is the piston rod.

In Fig. 16 is shown the sectional view of the compressor of a domestic refrigeration system of the vertical enclosed type, twin cylinder, splash system of lubrication from oil in the crank case, which oils the eccentric shaft, connecting rods, and pistons. This is the type compressor used by the Frigidaire Corp.

In Fig. 17 is shown the sectional view of a cylinder and piston of a horizontal double acting compressor of the open type construction, with radial valves and cages in the heads. Each suction valve is provided with a safety collar to prevent it from falling into the cylinder in case the valve stem should break. Manufactured by the Frick Co.

(*To Be Continued Next Week*)

Domestic Compressor

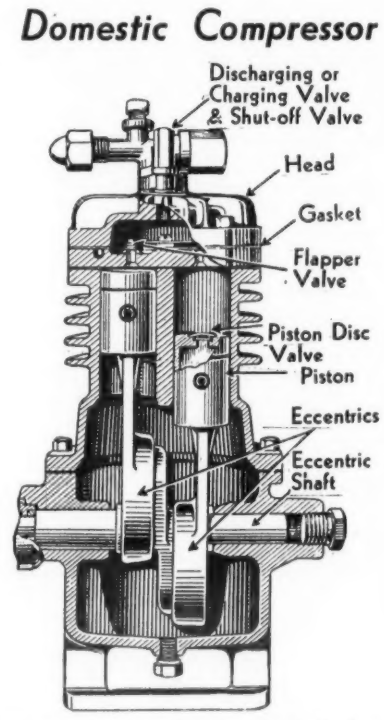

Fig. 16—Vertical twin-cylinder enclosed-type compressor used in Frigidaire household models.

Radial Valves in Head

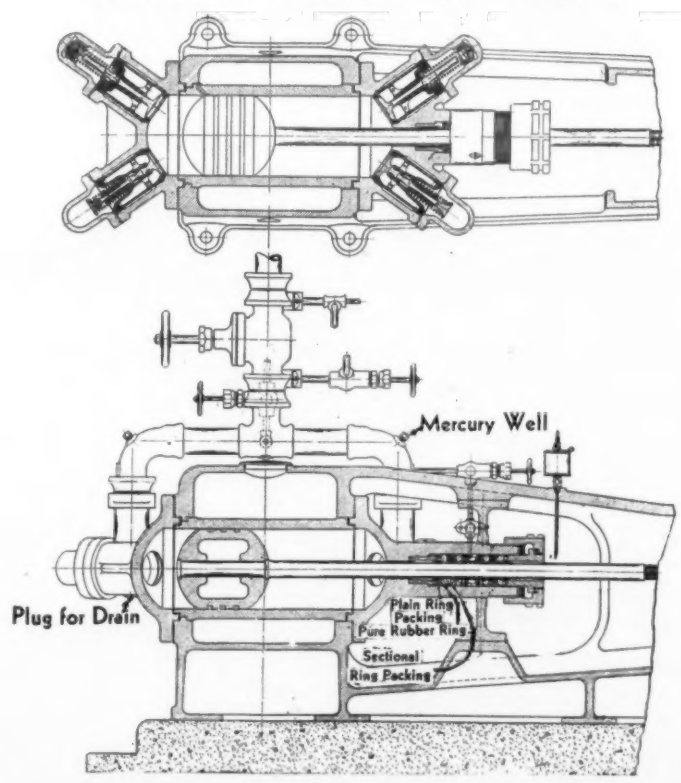

Fig. 17—Horizontal double-acting compressor of open-type construction and with radial valves in heads manufactured by Frick Co.

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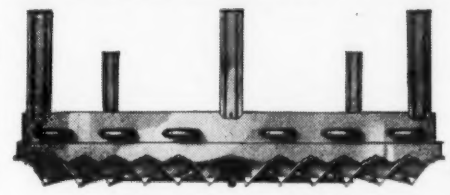

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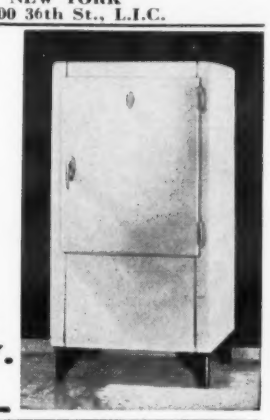

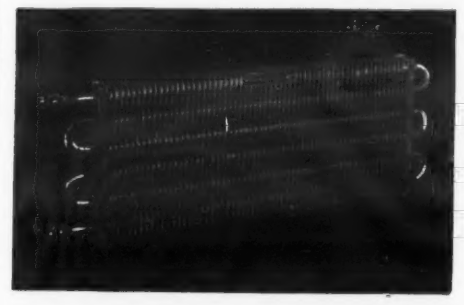

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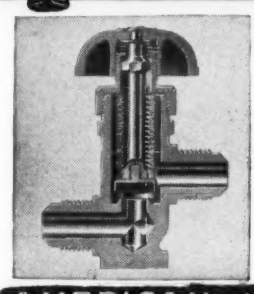

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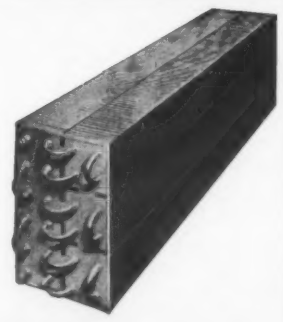

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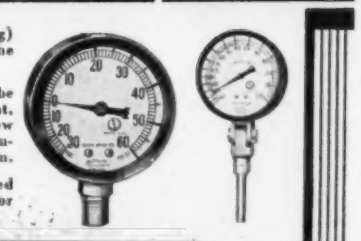

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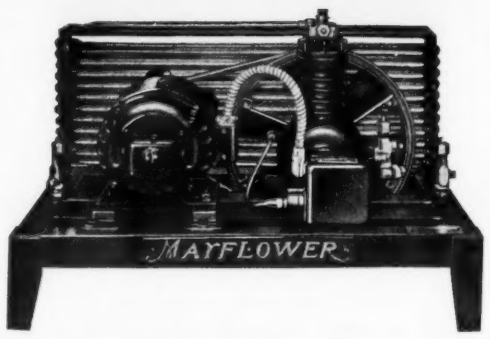

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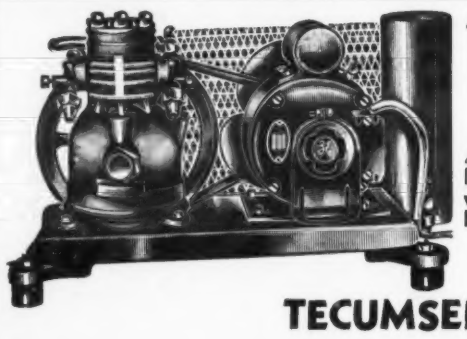

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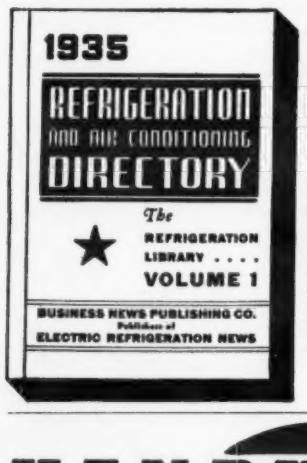
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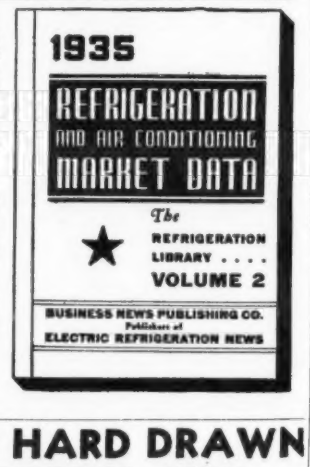
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York's Sales Plans Presented at Meeting Of 400 Distributors

(*Concluded from Page 1, Column 4*)

ers, York's advertising manager who also has offices in New York.

The distributor meeting was called to order Monday morning by S. E. Lauer, who first asked William S. Shipley, president, to give the address of welcome. Other speakers at the morning session included E. A. Kleinschmidt, vice president, C. A. Pearson, national commercial supervisor, S. H. Shipley, general works manager, and J. L. Rosenmiller, sales promotion manager, who was in charge of arrangements for the meetings.

After a noon lunch, the distributors were conducted, in small groups, on an inspection trip of the West York plant, to see the modern production lines on Freon commercial condensing units, the manufacture of big Freon and ammonia compressors, condensers, coolers, fittings, the welding shops, gas plant, and the York Test Plant.

On Monday night the program was open for recreation, rest, or participation in an open forum discussion. All evening at the Yorktowne hotel—where distributors were staying—there were small groups in the lobby, in the halls, and in hotel rooms, discussing ways and means of selling York equipment in greater quantities this year.

The group assembled Tuesday morning to hear two principal speakers, Mr. Lauer and Mr. Pearson. Mr. Lauer talked on the "Background of the York Organization and Its Products," reviewing past technical accomplishments of the company, and outlining the extensive sales engineering organization which is now available in the branches to furnish technical advice to distributors.

Mr. Pearson's subject was "The York Distributor Franchise—Relationship Between the Distributor and the Factory Branch." He discussed the activities of some of the outstanding distributors, showing what sales methods have been found most effective in the field.

Tuesday afternoon the distributors went through the Grantley manufacturing plants, inspecting the production of air conditioners, cold storage doors, the iron foundries, pattern shops, the coil shops, etc.

At the conclusion of this inspection trip, R. J. Thompson of Kinetic Chemicals, Inc., gave a demonstration of Freon, explaining its advantages as a refrigerant for air conditioning.

That night an "All-York" banquet was held, unique in the fact that every detail of service and entertainment was provided by York employees.

Thus, the affair was held in the company's Foremens' Club, the dinner was prepared and served by York employees, the entertainment was furnished by York comedians, and the music was supplied by the Yorkco orchestra and chorus (over 100 members). Honored guests at the banquet was a group of employees who have been with the company over 40 years.

F. E. Dennison, machine designer, talked on "Quality in Freon Machines" Wednesday morning, considering one at a time each part of the York commercial condensing unit and explaining the engineering which underlies its design.

Next speaker was J. R. Hertzler, manager of the air-conditioning division, on "York—The Leader in Air Conditioning." Mr. Hertzler reviewed some of the outstanding installations of the year in air conditioning, and then discussed new 1936 equipment to show how greater cooling capacity is being attained through new design refinements.

To conclude the morning's program, Frank White, service engineer, gave a brief talk on service and installation problems of commercial refrigeration equipment.

In the afternoon, Paul Carlson, assistant national commercial supervisor, treated the subject "A Big Market, and York Is Ready," presenting a thorough analysis of the various specific markets for commercial refrigeration and air-conditioning equipment, and showing how to approach them.

Climax of the affair was the presentation, by Mr. Rosenmiller, of the advertising and sales promotion program for 1936. First he introduced C. R. Marshall of the Mathes advertising agency, who explained details of the advertising plan, and displayed samples of advertisements already prepared.

Then Mr. Rosenmiller announced the sales promotion campaign, exhibiting the various window displays, signs, direct mail pieces, and sales literature, and explaining in detail how each is to be used by the distributors.

A short playlet concluded the meeting. This was entitled "A Salesman's Dream," depicting humorously yet dramatically the selling problems and competition of a salesman offering a high-grade installation, and how he can overcome the obstacles.

Ordinance to License & Bond Service Men Drafted in Detroit

(*Concluded from Page 1, Column 4*)

Engineering for investigation and report. This preliminary work has now been completed, and the ordinance is ready for the Council's action.

The movement is the outgrowth of discussions concerning the problem of limiting refrigeration service work to competent operators which have been going on for some time, according to H. H. Mills, chief inspector of the Department of Buildings and Safety Engineering.

The better type of service men, as well as executives of refrigeration companies and sales executives have been interested for some time in eliminating the incompetent, inexperienced, and generally unsatisfactory type of service man who, in recent years, has hung out his shingle as a refrigerator repairman, despite his inability to provide satisfactory service to refrigerator owners, Mr. Mills added.

The proposed ordinance is designed to cope with this situation by making it impossible for irresponsible or incompetent operators to obtain a license from the city.

Several complaints have been made by owners, Mr. Mills said, about the type of repair work done on their refrigerators by some of these so-called service men. In most cases, no permit to install or repair the units had been obtained, so that the city's first knowledge of the jobs existence came when the complaint was made. Traced down to their source, the jobs in practically all instances were found to be the work of "less than shoestring" operators, who had neither the finances nor the materials with which to do a proper piece of servicing.

Under terms of the proposed ordinance, licenses are renewable annually, and may be revoked by the mayor upon evidence of incompetence, negligence, misrepresentation, or wilful failure to comply with ordinance regulations. Licenses will also be classified according to different types of refrigerating systems, although no applicant is barred from qualifying for installation and service work on all types of systems.

Full text of the proposed ordinance follows:

"An ordinance to amend Chapter 130 of the Compiled ordinances of the City of Detroit of 1926, relative to the inspection, regulation, and operation of Ice Making, Cooling, and Multiple Refrigeration plants, by adding a section to be known as Section I-A.

"It is hereby ordained by the people of the City of Detroit:

"Section I. That Chapter 130 of the compiled ordinances of 1926 and the same is hereby amended by adding a section to be known as Section 1-A, and reading as follows:

"Section I-A. No person, firm, or corporation shall, or shall contract to, install, alter or service any refrigerant containing part of any refrigerating system, without first securing a license from the Mayor of the City of Detroit. License to install, alter, and/or service any refrigerating system shall be issued by the Mayor upon the recommendation of the Commissioner of Buildings and Safety Engineering after application in writing has been made to the Commissioner of Buildings and Safety Engineering, and a fee to be established by the Board of Rules of the Department of Buildings and Safety Engineering has been paid and a bond in the sum of $1,000, running to the City of Detroit for the faithful observance of the provisions of the ordinance has been filed with the Department of Buildings and Safety Engineering. Such bond shall be a personal bond with two sureties, or one from a recognized and approved surety company acceptable to and approved by the Corporation Counsel of the City of Detroit.

"All such licenses shall be renewed annually and shall be revokable by the Mayor upon the recommendation of the Commissioner of Buildings and Safety Engineering, for gross incompetence, gross neglect, deliberate misrepresentation, or wilful failure to comply with the requirements of this ordinance.

"Licenses shall be classified as to definite types of refrigerants used in the installation and/or service of refrigerating systems and applicants may be licensed for that particular refrigerant; Provided, however, any person, firm, or corporation may make application for and receive a license to engage in the installation and/or service of all classes of refrigerating systems.

"No license shall be issued until applicant has shown to the Department of Buildings and Safety Engineering by sworn affidavit that he, or it, has been actively engaged in the installation and/or service of refrigerating systems for a period of at least three (3) years, or has in his employ and actively in charge a person who has been engaged in the installation and/or service of refrigerating systems for a period of at least three (3) years.

"All ordinances and parts of ordinances in conflict herewith are hereby repealed.

"This ordinance is hereby declared to be immediately necessary for the public peace, health, and safety and shall take immediate effect."

Refrigeration Engineer on Chicago School Board

CHICAGO—Fred P. Siebel, Sr., vice president and a director of Utilities Engineering Institute, has been appointed a member of the Chicago Board of Education by Mayor Kelly.

Mr. Siebel's experience in the educational field covers many years. In addition to his association with Utilities Engineering Institute, he is president of J. E. Siebel Sons' Co., president of the Siebel Institute of Technology, and treasurer of Siebel Publishing Co.

He is a graduate of Chicago and Northwestern universities, a member of the International Refrigeration Congress, and chairman of the foundation committee of American Institute of Refrigeration. Other organizations with which he is associated include American Association for the Advancement of Science, American Chemical Society, Chemists' Club, Association of Consulting Chemists and Chemical Engineers.

INFORMAL TALK NUMBER 34

Steer Your Course with R-A-C-I Trained Men

Our job primarily, is training men. But in the final analysis, our greatest service is to the Industry which employs the men we train. Distributors and dealers . . . service organizations too . . . We invite you to steer your course to a profitable 1936 with the help of R-A-C-I Trained men.

As the one school which enjoys the endorsement and confidence of the leading manufacturers, many of whom have appointed their own engineers to assist us, we are best able to give you the type of men you want . . . trained as you want them trained.

Write for details of R-A-C-I Training. No obligation.

The REFRIGERATION AND AIR CONDITIONING INSTITUTE

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ARTIC Service News lists authorized distributors and stocking points, gives current information about refrigeration.

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DU PONT E. I. DU PONT DE NEMOURS & COMPANY, INC.

Wilmington, Delaware

District Sales Offices: Baltimore, Boston, Charlotte, Chicago, Cleveland, Kansas City, Newark, New York, Philadelphia, Pittsburgh, San Francisco

Classified

RATES: Fifty words or less, one insertion $2.00, additional words four cents each. Three insertions $5.00, additional words ten cents each.

PAYMENT in advance is required for advertising in this column.

REPLIES to advertisements with Box No. should be addressed to Electric Refrigeration News, 5229 Cass Ave., Detroit, Mich.

POSITIONS AVAILABLE

WANTED commission men calling on refrigeration and washing machine trade, to handle Goodyear V-belts for replacement. Exclusive territories still available. Liberal commission. Prefer men selling allied lines. Write in detail to Detroit Rubber Products, Inc., 35 Parsons St., Detroit, Mich.

EQUIPMENT FOR SALE

DEALERS AND SERVICEMEN. We sell used refrigerators "As Is". Recondition and spray them yourself and save money. Used Kelvinators $19.00, Frigidaires $25.00, Copelands $22.50, Servels $19.00, Ice-O-Matics $39.00, also General Electric, Westinghouse, Electrolux, and many others. Some all porcelain. Pilgrim Refrigeration Co., 43-47 39th Place, Long Island City, N. Y.

FEDERAL REFRIGERATOR CORP., 57 E. 25th St., New York, offers brand new Mullins, 3 tray porcelain evaporators, complete with trays, dividers, porcelain hanger, front porcelain baffle, $5.95. Brand new American Radiator expansion valves, $2.35. Thermostatic expansion valves, $3.55. Automatic door lights complete 55¢. Refrigerator shelving all sizes 10¢ to 50¢.

EQUIPMENT WANTED

WE ARE on the market for any quantity of used or close out commercial refrigeration equipment, condensing units, coils, air conditioning apparatus, etc. Advise by mail what you have to sell, make, model, condition, price, etc. Address Box No. 135, Madison Square Sta., New York, N. Y.

FRANCHISE AVAILABLE

JOBBER representation to handle nationally advertised line of ice cream cabinets and replacement parts for all makes of cabinets. Must be able to carry small stock on exclusive representation. Territories available west of Mississippi River and in the South. Write full details. Box 759, Electric Refrigeration News.

PIONEER maker of nationally advertised automatic coal burner has attractive proposition for a field representative in this area. One who can do a job with present dealers and add new dealers, to earn a liberal commission. Ample opportunity for advancement with leading manufacturer in the fastest growing industry. Address reply to Box 761, Electric Refrigeration News.

REPAIR SERVICE

MOTORS—Three phase, two phase, or single phase repulsion induction, rewound, including brushes and bearings when necessary, ⅙ H.P.—$9.45, ¼ H.P.—$10.75, ⅓ H.P.—$11.95, ½ H.P.—$15.25, ¾ H.P.—$18.25, 1 H.P.—$22.50. Motors returned like new mechanically and in appearance. South Shore Electric Co., 8437 South Chicago Ave., Chicago, Ill.

HERMETIC UNITS REPAIRED

HERMETIC UNITS rebuilt or exchanged: Majestic all models $17.50, Servel $22.50, G.E. $25.00 and $32.50, other standard makes $19.50. Majestic Hermetic Dome assembly $12.50, Majestic standard compressors $6.50, thermostat or cold control exchange $2.50. Other prices on request. Six months' guarantee. Wholesale only Refrigeration Products, Inc., 122 W. Illinois St., Chicago, Ill.

SCHOOLS

AIR CONDITIONING—REFRIGERATION. Taught by a combination of classroom and laboratory work. Over 60 lectures and laboratory set-ups. 5,000 square feet, well equipped. Tools and text furnished. Installation, service, design, engineering. Three months' full time course available. Detroit School of Refrigeration, 6517 Grand River Ave., Detroit, Mich.

PATENT FOR SALE

REFRIGERATOR UNIT DEFROSTER patent for sale. Eliminates turning off current to melt accumulation of ice on cooling unit and rising refrigerator temperature. Very sanitary. Eliminates recirculation of impure frost moisture from cooling unit and continually keeps low temperature in refrigerator. Box 760, Electric Refrigeration News.

PATENTS

HAVE YOUR patent work done by a specialist. I have had more than 25 years' experience in refrigeration engineering. Prompt searches and reports. Reasonable fees. H. R. Van Deventer (ASRE), Patent Attorney, 342 Madison Avenue, New York City.

BRUNNER
Send for the New
REFRIGERATION CATALOG
Eight Models of Compressors
Forty-one Models of Highsides
from 1/6 H. P. to 15 H. P.
BRUNNER MANUFACTURING CO.
UTICA, N. Y.

Questions

Air-Conditioning Firms

No. 2652 (Stock Broker, New York)—"We would greatly appreciate your sending us a complete list of all makers of air-conditioning equipment as one of our clients is interested in this machinery and we would like to get as much information as we can regarding same."

Answer: Manufacturers of both winter and summer air-conditioning equipment are listed on pages 150 through 157 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY. This directory is published for the purpose of answering such questions, as it is impossible for us to prepare individual lists in answer to the thousands of requests for such information.

Domestic Sales for 1935

No. 2653 (Dealer, California)—"We understand you publish the sales of domestic refrigerators by manufacturers every January for the previous year.

"Will you please send us a copy showing 1935 sales figures?"

Answer: An estimate of sales of household electric refrigerators during 1935, together with an estimate of the *total* number of electric refrigerators *now in use* in the United States, was published in the Jan. 1 issue of ELECTRIC REFRIGERATION NEWS. Back issues of the NEWS are available at a cost of 10 cents each.

Total estimated sales of all manufacturers by months are reported in ELECTRIC REFRIGERATION NEWS throughout the year. The sales figures *by individual manufacturers* are not reported, however, as these are never made public.

The 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK presents all known statistical facts about the refrigeration and air-conditioning industries, including an analysis of the market and a survey of distributive channels.

Counter Freezers

No. 2654 (Dealer, Missouri)—"Would it be possible for you to furnish me with the names and addresses of the various counter ice cream freezers and their respective manufacturers?

"I have been actively engaged in the refrigeration business for the past nine years with Frigidaire and Norge distributors. I believe there will be a large number of freezers sold in the next year, in fact I have over 20 inquiries for data on freezers at present.

"I would like to have the following data on each of the seven or eight freezers manufactured:

"General construction.

"Capacities of freezer head, hardening cabinet, mix storage.

"Financial stability of manufacturer.

"Compressor used and refrigerant.

"Does manufacturer carry time payment paper or outside finance company; if so what company?

"Prices applying to Kansas City area.

"I would appreciate any assistance or information you may be able to give me."

Answer: A list of manufacturers of counter-type ice cream freezers is published on pages 203 through 206 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Information on the construction, capacities, financing plans, and prices will have to be obtained from the manufacturers direct. For most direct-expansion freezers, any type of compressor and refrigerant can be used, although in a number of cases the counter freezer manufacturer will probably specify a particular type of refrigerating unit.

Commercial Figures

No. 2655 (Manufacturer, Illinois)—"We would like to know if you have any information available as to the actual number of commercial display cases, commercial refrigerators, and general commercial equipment in the refrigerator class that was sold in the United States during 1935?

"If you do not have this information available in your office, we would appreciate if you would advise us where we could procure same."

Answer: Sales figures on commercial refrigerator equipment for 1935 will not be available until some time in February, we have just learned from the Commercial Refrigerator Manufacturers Association.

As soon as we receive these figures, they will be published in ELECTRIC REFRIGERATION NEWS.

List of Manufacturers

No. 2656 (Government Bureau, District of Columbia)—"It is the duty of this office to dispose of repossessed electrical refrigerators that come into our possession through insured defaulted modernization loans arising from the Federal Housing Administration program.

"In an endeavor to cooperate with manufacturers, we are following the policy of first asking them to make a bid on their equipment. As a result of this policy, we frequently come into possession of refrigerators whose manufacturers' home address is unknown to this office.

"We are wondering if you have a complete list of all of the refrigerator manufacturers, together with their various trade names, that you can send to us for our use."

Answer: Manufacturers of household electric refrigerators are listed on pages 235 through 248 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

Majestic Compressors

No. 2657 (Dealer, New York)—"We would thank you to kindly advise where we may secure replacement motor-compressor units for Majestic Electro Sealed Refrigerators and what is the usual service procedure on the old units?"

Answer: Information regarding replacement parts for Majestic refrigerators can be obtained from Mr. P. L. Yates, Service Manager, Grigsby-Grunow Co., 5801 Dickens Ave., Chicago, Ill.

Sales to Florida

No. 2658 (Distributor, Florida)—"You were kind enough in September to send us the Nema figures for shipments of electric refrigerators into Florida through July, 1935.

"We are now very anxious to obtain these same figures for the last five months of 1935 and will very much appreciate your supplying them to us, if you can conveniently do so."

Answer: We are listing below the Nema figures for shipments of electric refrigerators into Florida for the months of August through November. The figures for December are not yet available.

August	2,163
September	1,497
October	2,800
November	2,172

Grunow Service Manual

No. 2659 (Service Firm, Ohio)—"Please send me the price for a Grunow refrigerator service manual, how to repair them, and where to send for it."

Answer: Write to General Household Utilities Co., 2638 North Crawford Ave., Chicago, Ill., for information on a Grunow refrigerator service manual.

You may be interested in the MASTER SERVICE MANUAL which we are publishing some time this month. This volume will contain complete information on the installation and servicing of all the fundamental types and varieties of electric refrigerators. Detailed instructions regarding the methods of handling each of the problems most commonly encountered in practical experience will be published in this book.

This manual will consist of a compilation of the series of articles by K. M. Newcum which have been published in the weekly issues of ELECTRIC REFRIGERATION NEWS starting with the April 10, 1935, issue, together with other supplementary material.

Ice Cube Trays

No. 2660 (Dealer, New Jersey)—"We are in the market for special ice cube trays and would appreciate your furnishing us with names of manufacturers of same."

Answer: Manufacturers of ice cube trays and ice cube tray equipment are listed on pages 278 and 279 of the 1935 REFRIGERATION AND AIR CONDITIONING DIRECTORY.

For rubber ice cube trays and rubber grids, address the Inland Mfg. Co., Dayton, Ohio.

Total Sales for 1935

No. 2661 (Manufacturer, Iowa)—"Do you have figures on the latest available estimates of the number of domestic electric refrigerators now in actual use, and the same figures on the number of commercial refrigeration installations or compressor installations, which would also include air-conditioning hook-ups?"

Answer: An estimate of the total number of household electric refrigerators in use in the United States through Dec. 31, 1935, was published on page 1 of the Jan. 1 issue of ELECTRIC REFRIGERATION NEWS.

We do not have similar figures on commercial refrigeration units, but an analysis of commercial refrigeration sales is published on page 78 of the 1935 REFRIGERATION AND AIR CONDITIONING MARKET DATA BOOK. To this commercial figure should be added 111,519 units, the total for the first 11 months of 1935, as reported by the 19 members of the Commercial Section of the Refrigeration Division of Nema.

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AIR CONDITIONING

The Buyer's Guide

Suppliers Specializing in Service to the Refrigeration and Air Conditioning Industries

KOCH COMMERCIAL REFRIGERATOR CABINETS
All types and sizes of heavily insulated refrigerators and display cases.
WANTED—DISTRIBUTORS and SALES AGENTS
Attractive sales proposition. Some good territories available. Many exclusive features. Write for information, and submit your qualifications.
KOCH REFRIGERATORS, North Kansas City, Mo.

THE IDEAL REFRIGERATOR
FOR SMALL RESTAURANTS, LUNCH ROOMS, BARBECUE STANDS, ETC
A practical all-metal Cabinet, white Du Lux, or porcelain finish—3" insulation—perfectly designed coil bunker—retinned steel shelving—bright chromium hardware.
Originally a solid 4-door cabinet, the two top doors may be transferred to display type if desired, giving a shelf area of 9 sq. ft. Lower compartment, likewise equipped with shelves, has an area of more than 19 sq. ft.
The model 350 Cabinet *has more storage space for its size*—68" x 48" x 28"—than any other cabinet—and the price will surprise you.
Sold only through Dealers and Distributors
Write for complete catalog
GLOEKLER MANUFACTURING COMPANY
429 FOURTH AVENUE - - - - PITTSBURGH, PA.

U. S. REFRIGERATION GAUGES
Standard of the Trade
All types of Gauges for refrigeration service and original equipment.
Always
ACCURATE..
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SILVER PISTON RINGS SEAL
THE ONLY PISTON RING DESIGNED & DEVELOPED Exclusively for Refrigeration
The Ring with a bearing face. A Bearing for the ring against the cylinder wall.
Longer Life
Less Friction
Better Seal
No Scuffing
Burnishing Cylinder
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Write for Details—SKINNER CHUCK CO., NEW BRITAIN, CONN.

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....in the fine art of recalibration of float valves and the silver soldering of evaporation coils . . . for all makes of Ice Cream Cabinets.
WE MANUFACTURE AND REPLACE...Monel Tops Enamel Panels • Tanks Rims and Rim Sleeves ...all other parts for all make cabinets.
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Vol. 9—May 3 to Aug. 30, 1933. (Serial Nos. 215 to 232.)
Vol. 10—Sept. 6 to Dec. 27, 1933. (Serial Nos. 233 to 249.)
Vol. 11—Jan. 3 to April 25, 1934. (Serial Nos. 250 to 266.)
Vol. 12—May 2 to Aug. 29, 1934. (Serial Nos. 267 to 284.)
Vol. 13—Sept. 5 to Dec. 26, 1934. (Serial Nos. 285 to 301.)
Vol. 14—Jan. 2 to April 24, 1935. (Serial Nos. 302 to 318.)
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